United States
Environmental
Protection
Agency

Office of Air Quality Planning and Standards
Information Transfer and Program Integration Division
Information Management Group
Research Triangle Park, NC 27711

AQS User's Guide

Volume AQ1

AQS Data Dictionary

VERSION 2.0

Date Revised: May 13, 2004

AQS USER'S GUIDE

Volume AQ2

AQS DATA DICTIONARY

VERSION 2.0

May 13, 2004

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF AIR QUALITY PLANNING AND STANDARDS
INFORMATION TRANSFER AND PROGRAM INTEGRATION DIVISION
INFORMATION MANAGEMENT GROUP
RESEARCH TRIANGLE PARK, NC 27711

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1 Introduction

This volume, AQ1, contains the air quality (AQ) data dictionary. Volume AQ2, describes coding of the AQ data transactions. It describes the views, records, and fields used by AQS.

The data dictionary is organized by sections.

Section 2 lists terms used throughout the document, and their meaning in the context of this document. Types of terms would include: database definition terms, and math functions.

Section 3 describes the AQS views. The initial subsection presents data model diagrams that show the relationships between the views. The subsequent subsections are descriptions of the individual views. Each view description includes: a narrative explaining its purpose, content, and use; a description of the fields contained in the view.

Section 4 describes the AQS fields. The fields are presented in alphabetic order. Field descriptions include:

1. A narrative describing the field, including its uses;
2. Those parts of AQS that are the source of the data;
3. The data type, length, and whether the field is required;
4. The views in which the field is used;
5. Any rules of value assignment, including algorithms and formulas.

2 Description of Terms

Term	Definition
Active Day	A day occurring within a valid sample period.
AQCR	Air Quality Control Region
AQS	Air Quality System
AQS Field Name	The standard term for an AQS data element.
Average	Arithmetic mean
CEILING	A CEILING function returns the smallest integer higher than, or equal to, the given number. Frequently referred to as "rounding up".
CFR	Code of Federal Regulations
CMSA	Consolidated Metropolitan Statistical Area
CO	Carbon Monoxide
Database Field Name	The Oracle field name for an AQS data element. The name must conform to Oracle field name constraints, e.g., a maximum of 30 characters, no spaces, no punctuation marks, etc. The database field name will generally represent be an abbreviated form of the AQS field name.
EDR	Environmental Data Registry
EPA	Environmental Protection Agency
Exceedance	A sample value measurement that is above the level of the applicable standard.

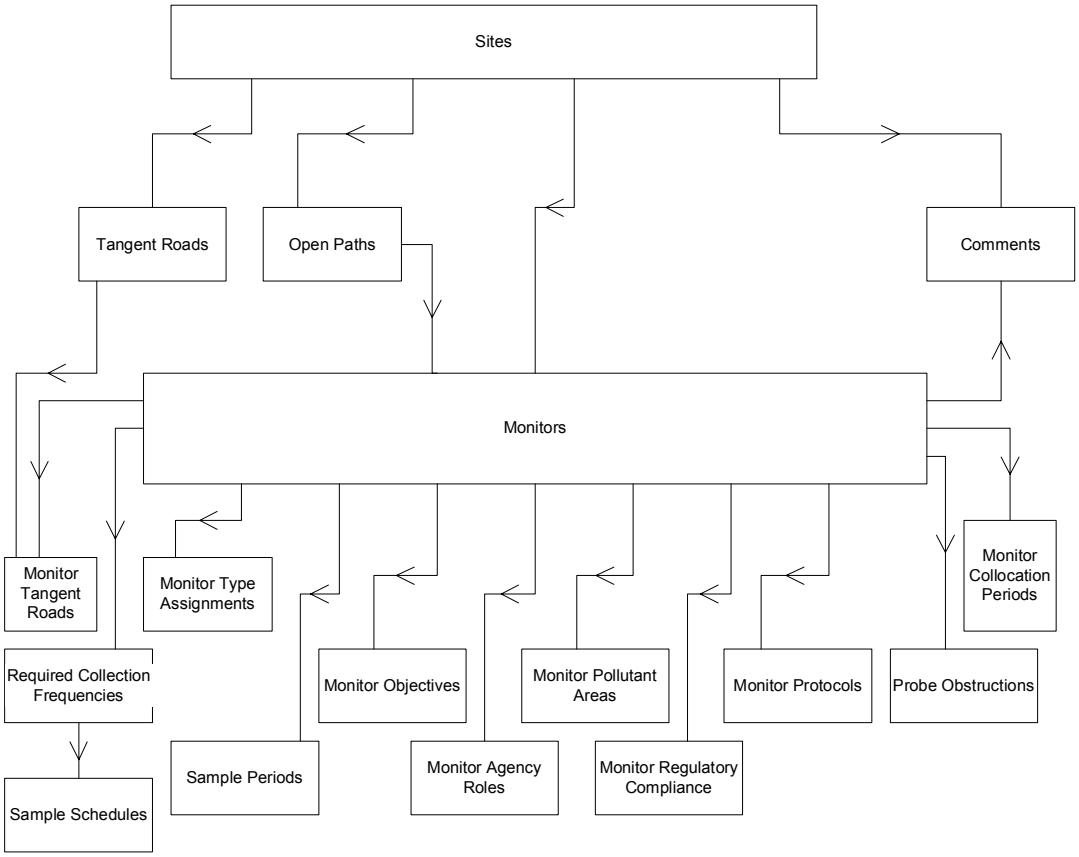
Term	Definition
Field Type (Length)	There are four field types used in AQS: character, numeric, float, and date. The lengths represent the length of the underlying physical field. The physical length is large enough to accommodate the current lengths used plus any future growth. For example, Method Code has a length of 8, which accommodates the 3-digit logical length currently used and any conceivable expansion needed in the future. Character types have maximum lengths associated with them. The lengths of numeric fields are indicated by the number of digits to the left and right of the decimal point. For example, a numeric field with a length of 8.2 has 8 digits to the left of the decimal point, and 2 to the right, for a maximum of 10, i.e., nnnnnnnnn.nn. Date and float types have a fixed length by definition. The date type includes both date and time in that same fixed length; the float type can accommodate numbers in the range of 1.0E-129 through 9.999E125.
FIPS	Federal Information Processing Standards
FRM	Federal Reference Method
GPS	Global Positioning System
Hourly Sample	A sample whose sample duration, or interval, is one (1) hour.
HQ	EPA Headquarters
ID	Numeric identifier
Key	An indication of whether a field is part of the unique identification of a record in the view.
LDP	Locational Data Policy
LST	Local Standard Time
Make-Up Sample	A sample recorded as a replacement for a missing Scheduled Sample.
MDL	Method detectable limit, or the lowest concentration that can be detected by a sampling instrument and method.
MINIMUM	A MINIMUM function returns the least of a series of numbers.

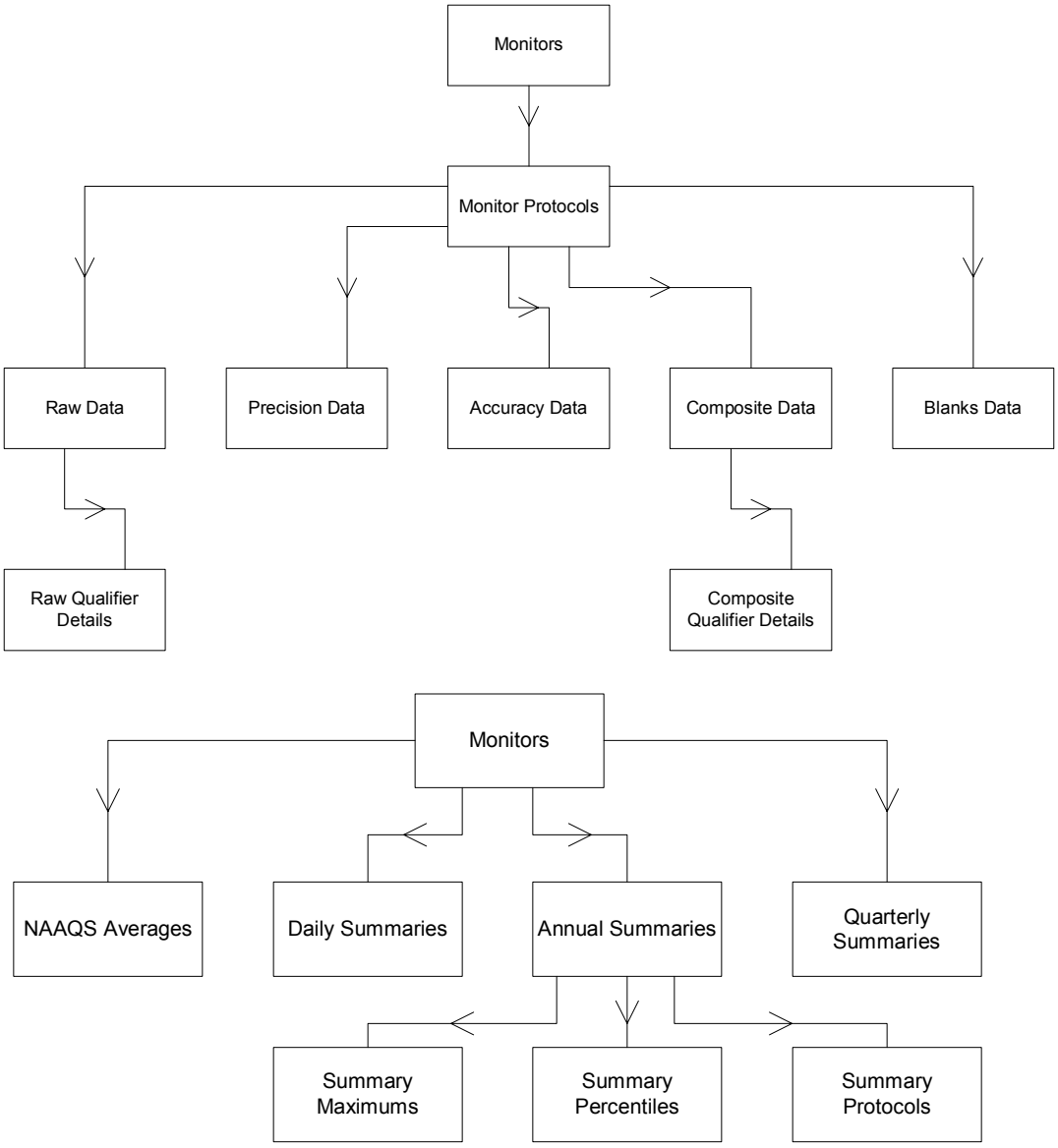
Term	Definition
Monitoring Season (Defined)	The consecutive sub-annual period, defined by state, county, or site, during which ozone monitoring is required for National Air Monitoring Station (NAMS) and State or Local Air Monitoring Station (SLAMS) monitors, as, listed in the ambient monitoring rule (40CFR58, Appendix D.)
Monitoring Season (Effective)	The defined monitoring season for a National Air Monitoring Station (NAMS) or State or Local Air Monitoring Station (SLAMS) monitor extended to include the earliest and latest exceedances occurring outside that defined season.
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NAMS	National Air Monitoring Station
NO2	Nitrogen Dioxide
PAMS	Photochemical Assessment Monitoring System
Pb	Lead
PEP	Performance Evaluation Program
PM	Particulate Matter
PM10	PM10 Total 0-10um
PM2.5	PM2.5 - Local Conditions
POC	Pollutant Occurrence Code
ppm	Parts Per Million
O3	Ozone
RCF	Required Collection Frequency
Required	An indication of whether a field always has a value, i.e., not null. It should be noted that an indication that a field value is required does not mean that it must be user-specified; it may be system-generated. Some columns are conditionally user-specified and system generated. For example, for site coordinates the user may specify the latitude and longitude coordinates, and the system will generate the Universe Transverse Mercator (UTM) coordinates, or vice versa.
Scheduled Day	A day where sampling is required for a monitor, as determined by the applicable required collection frequency and the National Air Monitoring Station (NAMS) schedule.
Scheduled Sample	A sample recorded on a Scheduled Day.
Scheduled Stratum	A period of time starting from a Scheduled Day up to, but not including the immediately succeeding Scheduled Day.

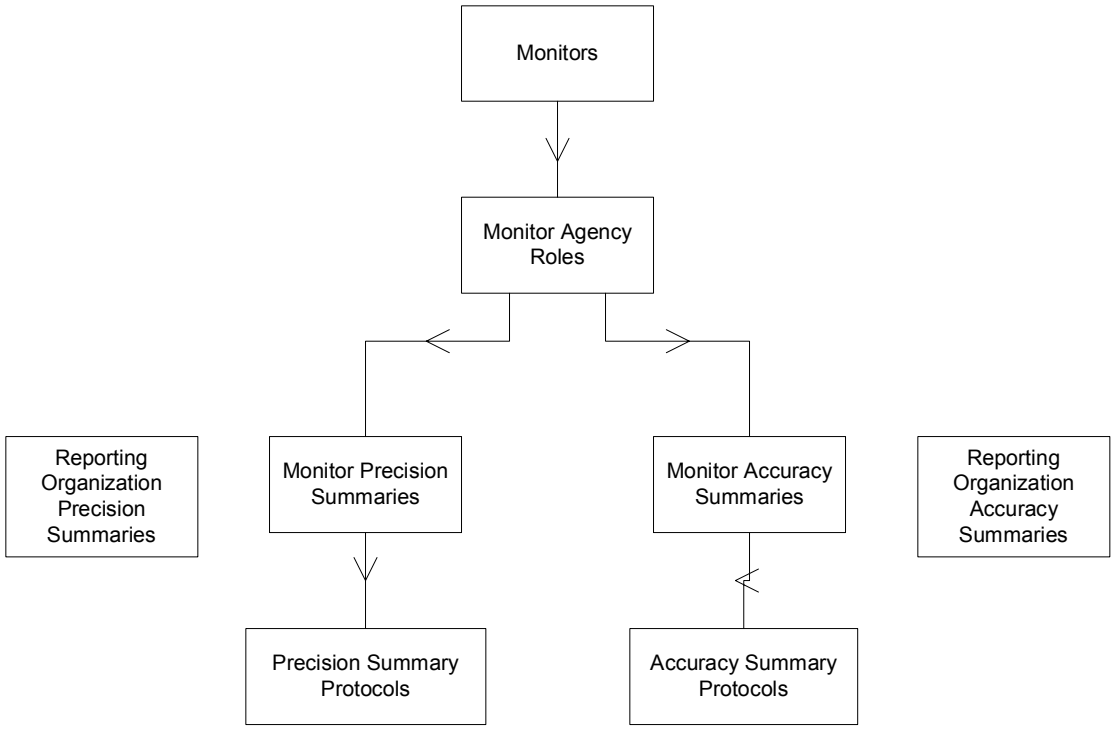
Term	Definition
SLAMS	State or Local Air Monitoring Station
SO2	Sulfur Dioxide
TSP	Total Suspended Particulate
µg/m^3 LC	micrograms per cubic meter – local conditions
µg/m^3 SC	micrograms per cubic meter – standard conditions
USGS	United States Geological Survey
UTM	Universe Transverse Mercator
Valid Daily Maximum	The maximum value recorded, or computed, on a day that meets daily summary criteria.
Valued Stratum	A Scheduled Stratum during which at least one observation was recorded.
View	A logical representation of data, where data elements are grouped together from one or more physical tables. Logical views are being used, rather than physical tables, to simplify the AQS database for this Users Data Dictionary.
WGS	World Geodetic Survey

3 AQS Views

3.1 Data Model




Monitors
Monitor Protocols
Raw Data
Precision Data
Accuracy Data
Composite Data
Blanks Data
Raw Qualifier Details
Composite Qualifier Details
Monitors
NAAQS Averages
Daily Summaries
Annual Summaries
Quarterly Summaries
Summary Maximums
Summary Percentiles
Summary Protocols


Monitors
Monitor Agency Roles
Reporting Organization Precision Summaries
Monitor Precision Summaries
Monitor Accuracy Summaries
Reporting Organization Accuracy Summaries
Precision Summary Protocols
Accuracy Summary Protocols

3.2 Sites

3.2.1 Description

The Sites view contains information about Air Quality Sites, including: geographical information, (e.g., latitude and longitude, Universe Transverse Mercator, i.e., UTM coordinates), historical information, (e.g., established and terminated dates), site location information, (e.g., street address, city, Air Quality Control Region or AQCR), and other general characteristics, (e.g., land use, location setting). In addition, the view contains all information required by the Locational Data Policy. A Sites record is uniquely identified by the combination of state, county, and site ID. Alternative unique identifiers are the latitude-longitude combination, and the UTM coordinates. Its parent is the Counties view; its child views are: Tangent Roads, Open Paths, Monitors, and Comments.

3.2.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
State Code	STATE_CODE	CHARACTER (2)	√	√
County Code	COUNTY_CODE	CHARACTER (3)	√	√
Site ID	SITE_ID	CHARACTER (4)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Latitude	LATITUDE	NUMBER (2.6)	√	
Longitude	LONGITUDE	NUMBER (3.6)	√	
UTM Zone	UTM_ZONE	NUMBER (12)	√	
UTM Easting	UTM_EASTING	NUMBER (8.2)	√	
UTM Northing	UTM_NORTHING	NUMBER (8.2)	√	
Horizontal Collection Method	LDP_COLL_METHOD_CODE	CHARACTER (8)	√	
Horizontal Datum	LDP_HORIZ_DATUM	CHARACTER (120)	√	
Horizontal Accuracy	LDP_HORIZ_ACC_VALUE	NUMBER (8.2)	√	
Source Scale	LDP_SOURCE_SCALE	NUMBER (12.0)	√	
Geometric Type	LDP_GEOMETRIC_TYPE	CHARACTER (50)	√	
Reference Point	LDP_REFERENCE_POINT	CHARACTER (50)	√	
Vertical Measure	LDP_VERT_MEAS	NUMBER (8.2)	√	
Vertical Collection Method	LDP_VERTICAL_METHOD_CODE	CHARACTER (3)	√	
Vertical Datum	LDP_VERTICAL_DATUM	CHARACTER (60)	√	
Vertical Accuracy	LDP_VERT_ACC_VALUE	NUMBER (8.2)	√	
Time Zone	TIME_ZONE_NAME	CHARACTER (30)	√	
Supporting Agency	AGENCY_CODE	CHARACTER (8)		
Street Address	STREET_ADDRESS	CHARACTER (2000)	√	
City Code	CITY_CODE	CHARACTER (8)	√	
Urban Area Code	UAR_CODE	CHARACTER (4)	√	
AQCR	AQCR_CODE	CHARACTER (8)		
Land Use Type	LAND_USE_TYPE	CHARACTER (20)	√	
Location Setting	LOCATION_SETTING	CHARACTER (50)	√	
Date Site Established	SITE_ESTAB_DATE	DATE	√	
Date Site Terminated	SITE_TERMINATED_DATE	DATE		
Zip Code	ZIP_CODE	CHARACTER (9)		

Name	Database Field	Type (Length)	Req'd	Key
Congressional District	CONGR_DISTR_NUM	NUMBER (12.0)		
Census Tract	CENSUS_TRACT_NUM	CHARACTER (6)		
Block Group	BLOCK_GROUP_NUM	CHARACTER (1)		
Block	BLOCK_NUM	CHARACTER (4)		
Class I Area	CLASS_I_AREA_CODE	CHARACTER (8)		
Local Region	LOCAL_REGION_CODE	CHARACTER (8)		
Local Site Name	LOCAL_SITE_NAME	CHARACTER (70)		
HQ Evaluation Date	HQ_EVAL_DATE	DATE		
EPA Region Evaluation Date	REGIONAL_EVAL_DATE	DATE		
Direction from Central Business District to Site	COMPASS_SECTOR_CBD	CHARACTER (3)		
Distance from Central Business District to Site	CITY_DIST	NUMBER (8.2)		
Meteorological Site Type	MET_SITE_TYPE	CHARACTER (20)		
Meteorological Site ID	MET_SITE_ID	CHARACTER (11)		
Direction to Meteorological Site	COMPASS_SECTOR_MET_SITE	CHARACTER (3)		
Distance to Meteorological Site	MET_SITE_DIST	NUMBER (8.2)		
State or Local ID	LOCAL_SITE_ID	CHARACTER (40)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.3 Tangent Roads

3.3.1 Description

The Tangent Roads view contains information about streets near a monitoring site, including: the name, positioning relative to the site, and general use characteristics. A Tangent Roads record is uniquely identified by the combination of state, county, site ID, and street number. Its parent is the Sites view; its child view is Monitor Tangent Roads.

3.3.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
State Code	STATE_CODE	CHARACTER (2)	√	√
County Code	COUNTY_CODE	CHARACTER (3)	√	√
Site ID	SITE_ID	CHARACTER (4)	√	√
Tangent Street Number	TANGENT_ROAD_NUM	NUMBER (12.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Street Name	TANGENT_ROAD_NAME	CHARACTER (50)	√	
Type Road	ROAD_TYPE	CHARACTER (20)	√	
Direction from Site to Street	COMPASS_SECTOR	CHARACTER (3)	√	
Traffic Count	DAILY_TRAFFIC_CNT	NUMBER (12.0)		
Year of Traffic Count	DAILY_TRAFFIC_YEAR	NUMBER (4.0)		
Source of Traffic Count	TRAFFIC_VOLUME_SOURCE	CHARACTER (50)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.4 Open Paths

3.4.1 Description

The Open Paths view contains information about open paths at a monitoring site, including relative positioning and dimensions. An open paths record is uniquely identified by the combination of state, county, site ID, and path number. Its parent is the Sites view.

3.4.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
State Code	STATE_CODE	CHARACTER (2)	√	√
County Code	COUNTY_CODE	CHARACTER (3)	√	√
Site ID	SITE_ID	CHARACTER (4)	√	√
Open Path Number	OPEN_PATH_NUM	NUMBER (12.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Direction from Receiver to Transmitter	COMPASS_SECTOR	CHARACTER (3)	√	
Land Use Type	LAND_USE_TYPE	CHARACTER (20)	√	
Beam Length	BEAM_LENGTH	NUMBER (8.2)		
Minimum Beam Height	MIN_BEAM_HEIGHT	NUMBER (8.2)		
Maximum Beam Height	MAX_BEAM_HEIGHT	NUMBER (8.2)		
Height of Receiver	RECEIVER_HEIGHT	NUMBER (8.2)		
Height of Transmitter	TRANSMITTER_HEIGHT	NUMBER (8.2)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.5 Monitors

3.5.1 Description

The Monitors view contains information about air quality monitoring stations, including: parameter, Pollutant Occurrence Code (POC), dominant source of pollution, measurement scale, and probe description information. A Monitors record is uniquely identified by the combination of state, county, site ID, parameter, and POC. Its parent is the Sites view; its child views are: Sample Periods, Monitor Type Assignments, Monitor Agency Roles, Monitor Objectives, Required Collection Frequencies, Monitor Tangent Roads, Monitor Pollutant Areas, Monitor Regulatory Compliances, Monitor Protocols, Monitor Collocation Periods, Probe Obstructions, Comments, NAAQS Averages, Daily Summaries, Quarterly Summaries, and Annual Summaries.

3.5.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
State Code	STATE_CODE	CHARACTER (2)	√	√
County Code	COUNTY_CODE	CHARACTER (3)	√	√
Site ID	SITE_ID	CHARACTER (4)	√	√
Parameter	PARAMETER_CODE	CHARACTER (5)	√	√
POC	POC	NUMBER (2.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Monitor ID	MONITOR_ID	CHARACTER (20)	√	
Screening Group	SCREENING_GROUP_NUM	NUMBER (12.0)	√	
Project Class	PROJECT_TYPE_CODE	CHARACTER (8)		
Dominant Source	DOMINANT_SOURCE	CHARACTER (20)		
Measurement Scale	MEASUREMENT_SCALE	CHARACTER (20)		
Open Path Number	OPEN_PATH_NUM	NUMBER (12.0)		
Probe Location	PROBE_LOCATION	CHARACTER (20)		
Probe Height	PROBE_HEIGHT	NUMBER (8.2)		
Probe Horizontal Distance	PROBE_HORIZ_DIST	NUMBER (8.2)		
Probe Vertical Distance	PROBE_VERT_DIST	NUMBER (8.2)		
Surrogate Indicator	SURROGATE_IND	CHARACTER (1)		
Unrestricted Air Flow Indicator	UNRESTR_AIR_FLOW_IND	CHARACTER (1)		
Sample Residence Time	SAMPLE_RESIDENCE_TIME	NUMBER (8.2)		
Last Post Date	LAST_RAW_DATA_POST_DATE	DATE		
Last Sampling Date	LAST_SAMPLING_DATE	DATE		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.6 Monitor Pollutant Areas

3.6.1 Description

The Monitor Pollutant Areas view contains information about designations of monitors to pollutant areas, which are geographic areas defined by a program office in which a certain pollutant should be closely watched. Pollutant area types are Monitoring Areas, Monitor Planning Areas, and Status Areas. A Monitor Pollutant Areas record is uniquely identified by the combination of monitor and pollutant area. Its parent is the Monitors view.

3.6.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Pollutant Area Code	POLLUTANT_AREA_CODE	CHARACTER (5)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Pollutant Area Type	POLLUTANT_AREA_TYPE	CHARACTER (40)	√	
Worst Site Type	WORST_SITE_TYPE	CHARACTER (8)		
Community Monitoring Zone	COMMUNITY_MONITORING_ZONE	NUMBER (4.0)		
Applicable NAAQS Indicator	APPLICABLE_NAAQS_IND	CHARACTER (1)		
Spatial Average Indicator	SPATIAL_AVERAGE_IND	CHARACTER (1)		
Schedule Exemption Indicator	SCHEDULE_EXEMPTION_IND	CHARACTER (1)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.7 Sample Periods

3.7.1 Description

The Sample Periods view defines the time periods during which sampling took place at a monitor. A Sample Periods record is uniquely identified by the combination of monitor and the date sampling began. Its parent is the Monitors view.

3.7.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Date Sampling Began	SAMPLING_BEGIN_DATE	DATE	√	√
Date Sampling Ended	SAMPLING_END_DATE	DATE		
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.8 Monitor Type Assignments

3.8.1 Description

The Monitor Type Assignments view defines time periods during which a monitor was assigned a particular monitor type, e.g. State or Local Air Monitoring Station (SLAMS), National Air Monitoring Station (NAMS), or Photochemical Assessment Monitoring System (PAMS). A Monitor Type Assignments record is uniquely identified by the combination of monitor, monitor type, and the date the assignment began. Its parent is the Monitors view.

3.8.2 Elements

Name	Database Field	Type (Length)	Length	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	20	√	√
Monitor Type	MONITOR_TYPE	CHARACTER (20)	20	√	√
Monitor Type Begin Date	MONITOR_TYPE_BEGIN_DATE	DATE		√	√
Monitor Type End Date	MONITOR_TYPE_END_DATE	DATE			
Status Indicator	STATUS_IND	CHARACTER (1)	1	√	
Action Type	ACTION_TYPE	CHARACTER (8)			
Action Date	MONITOR_TYPE_ACTION_DATE	DATE			
Action Reason	ACTION_REASON_CODE	CHARACTER (8)			
Created User	CREATED_USER	CHARACTER (40)			
Created Date	CREATED_DATE	DATE			
Modified User	MODIFIED_USER	CHARACTER (40)			
Modified Date	MODIFIED_DATE	DATE			

3.9 Monitor Agency Roles

3.9.1 Description

The Monitor Agency Roles view defines time periods during which a role, (reporting, collecting, analyzing), for a monitor was assigned to an agency. A Monitor Agency Roles record is uniquely identified by the combination of monitor, role, and the date the role assignment began. Its parent is the Monitors view.

3.9.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Agency Role Name	ROLE	CHARACTER (20)	√	√
Agency Code	AGENCY_CODE	CHARACTER (8)	√	
Agency Role Begin Date	AGENCY_ROLE_BEGIN_DATE	DATE		√
Agency Role End Date	AGENCY_ROLE_END_DATE	DATE		
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.10 Monitor Objectives

3.10.1 Description

The Monitor Objectives view contains information that classifies the reason air monitoring is being performed, and the target of that monitoring. A Monitor Objectives record is uniquely identified by the combination of monitor and the objective type. Its parent is the Monitors.

3.10.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Monitor Objective Type	MONITOR_OBJ_TYPE	CHARACTER (50)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Urban Area Represented	UAR_CODE	CHARACTER (4)		
MSA Represented	MSA_CODE	CHARACTER (8)		
CMSA Represented	CMSA_CODE	CHARACTER (8)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.11 Required Collection Frequencies

3.11.1 Description

The Required Collection Frequencies view defines time periods during which a designated frequency of data collection was required. A Required Collection Frequencies record is uniquely identified by the combination of monitor, and the date the required frequency became effective. Its parent is the Monitors view.

3.11.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Required Collection Frequency Begin Date	REQ_COLL_FREQ_BEGIN_DATE	DATE	√	√
Required Collection Frequency End Date	REQ_COLL_FREQ_END_DATE	DATE		
Required Collection Frequency Code	COLL_FREQ_CODE	CHARACTER (8)	√	
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.12 Sample Schedules

3.12.1 Description

The Sample Schedules view contains information about monthly collection frequencies for seasonal or random required collection frequency period. A Sample Schedules record is uniquely identified by the combination of monitor, the date a required collection frequency became effective, and month. Its parent is the Required Collection Frequencies view.

3.12.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Required Collection Frequency Begin Date	REQ_COLL_FREQ_BEGIN_DATE	DATE	√	√
Sample Schedule Month	SAMPLE_SCHEDULE_MONTH	NUMBER (2.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Monthly Required Collection Frequency	COLL_FREQ_CODE	CHARACTER (8)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.13 Monitor Tangent Roads

3.13.1 Description

The Monitor Tangent Roads view defines the distance between a monitor and a tangent road. A Monitor Tangent Roads record is uniquely identified by the combination of monitor and street number. Its parents are the Monitors and Tangent Roads views.

3.13.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Tangent Street Number	TANGENT_ROAD_NUM	NUMBER (12.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Distance from Monitor to Tangent Road	DIST_TO_TANGENT_ROAD	NUMBER (8.2)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.14 Probe Obstructions

3.14.1 Description

The Probe Obstructions view contains information about any restriction of airflow around the probe. A Probe Obstructions record is uniquely identified by the combination of monitor and obstruction type. Its parent is the Monitors view.

3.14.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Probe Obstruction Type	PROBE_OBSTR_TYPE	CHARACTER (20)	√	√
Direction from Monitor to Probe Obstruction	COMPASS_SECTOR	CHARACTER (3)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Distance from Monitor to Probe Obstruction	PROBE_OBSTR_DIST	NUMBER (8.2)	√	
Probe Obstruction Height	PROBE_OBSTR_HEIGHT	NUMBER (8.2)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.15 Monitor Regulatory Compliances

3.15.1 Description

The Monitor Regulatory Compliances view documents compliance of a monitor with a regulation. A Monitor Regulatory Compliances record is uniquely identified by monitor and regulation. Its parent is the Monitors view.

3.15.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Regulation Code	REGULATION_CODE	CHARACTER (8)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Compliance Indicator	COMPLIANCE_IND	CHARACTER (3)		
Compliance Date	COMPLIANCE_DATE	DATE		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.16 Monitor Collocation Periods

3.16.1 Description

The Monitor Collocation Periods view defines the periods of time during which a monitor pair were collocated for the purpose of collecting precision data. A Monitor Collocation Periods record is uniquely identified by the combination of monitor and the date collocation began. Its parent is the Monitors view.

3.16.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Collocation Begin Date	CLOC_BEGIN_DATE	DATE	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Primary Sampler Indicator	PRI_MONITOR_IND	CHARACTER (1)	√	
Distance from Primary Sampler	CLOC_DIST	NUMBER (8.2)		
Collocation End Date	CLOC_END_DATE	DATE		
Primary Sampler Monitor ID	PRIMARY_MONITOR_ID	CHARACTER (20)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.17 Monitor Protocols

3.17.1 Description

The Monitor Protocols view contains the protocols by which sample data for a monitor are collected. A Monitor Protocols record is uniquely identified by the combination of monitor, protocols, and alternate method detectable limit (MDL). Its parents are the Monitors and Protocols views; its child views are Raw Data, Composite Data, Summary Protocols, Precision Summary Protocols, and Accuracy Summary Protocols.

3.17.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Duration Code	DURATION_CODE	CHARACTER (8)	√	
Reported Unit	UNIT	CHARACTER (3)	√	
Method Code	METHODOLOGY_CODE	CHARACTER (8)	√	
Collection Frequency Code	COLL_FREQ_CODE	CHARACTER (8)		
Composite Type	COMP_TYPE	CHARACTER (10)		
Alternate MDL	ALT_MDL	NUMBER (5.5)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.18 Composite Data

3.18.1 Description

The Composite Data view contains the concentrations of air pollutants as measured by air monitoring equipment from composite air samples. In the composite sampling technique, two or more air samples obtained at different times are combined and analyzed as one sample. This yields something of an average concentration for the time period during which the individual samples were collected. A Composite Data record is uniquely identified by the combination of monitor, year, and composite period. Its parent is the Monitor Protocols view; its child view is Composite Qualifier Details.

3.18.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Composite Year	COMP_YEAR	NUMBER (4.0)	√	√
Composite Period	PERIOD	NUMBER (2.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	
Number of Samples	SAMPLE_CNT	NUMBER (10.0)		
Reported Sample Value	REPORTED_SAMPLE_VALUE	NUMBER (5.5)		
Reported Scale	REPORTED_SCALE	NUMBER (1.0)		
Standard Sample Value	STD_SAMPLE_VALUE	NUMBER (5.5)		
Standard Scale	SUMMARY_SCALE	NUMBER (1.0)		
Standard Unit	UN_UNIT_STD	CHARACTER (3)		
Uncertainty Value	UNCERTAINTY_VALUE	NUMBER (6.4)		
Primary Qualifier Code	QUALIFIER_CODE	CHARACTER (8)		
Primary Qualifier Type	QUALIFIER_TYPE	CHARACTER (8)		
Half MDL Substitution Indicator	LT_HALF_MDL_IND	CHARACTER (1)		
EPA Region Concurrence Indicator	EPA_CONCURRENCE_IND	CHARACTER (1)		
Exclusion Indicator	EXCLUSION_IND	CHARACTER (1)		
Exclusion Date	EXCLUSION_DATE	DATE		
Freeze Indicator	FREEZE_IND	CHARACTER (3)		
Action Indicator	ACTION_IND	CHARACTER (1)		
Session Screening Group	SCREENING_GROUP_NUM	NUMBER (12.0)		
Session User	ORACLE_USER_ID	CHARACTER (40)		
Session Date/Time	SESSION_DATE	DATE		

3.19 Composite Qualifier Details

3.19.1 Description

The Composite Qualifier Details view contains qualification information about the composite sample. Types of qualification are: exceptional event, natural events, and quality assurance. A Composite Qualifier Details record is uniquely identified by the combination of monitor, year, composite period and qualifier. Its parent is the Composite Data view.

3.19.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Composite Year	COMP_YEAR	NUMBER (4.0)	√	√
Composite Period	PERIOD	NUMBER (2.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	√
Qualifier Code	QUALIFIER_CODE	CHARACTER (8)	√	√

3.20 Raw Data

3.20.1 Description

The Raw Data view contains the concentrations of various air pollutants as measured by air monitoring equipment throughout the U.S. The values may result from equipment that monitors continuously, or monitors that require manual intervention to collect the data, e.g., a monitor that draw air through a filter would require the removal and weighting of the filter to determine the amount of particulate matter in the sampled air. A Raw Data record is uniquely identified by the combination of monitor and date/time. Its parent is the Monitor Protocols view; its child view is Raw Qualifier Details.

3.20.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Sample Date/Time	SAMPLING_BEGIN_DATETIME	DATE	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	
Reported Sample Value	REPORTED_SAMPLE_VALUE	NUMBER (5.5)		
Reported Scale	REPORTED_SCALE	NUMBER (1.0)		
Standard Sample Value	STD_SAMPLE_VALUE	NUMBER (5.5)		
Standard Scale	SUMMARY_SCALE	NUMBER (1.0)		
Standard Unit	UN_UNIT_STD	CHARACTER (3)		
Uncertainty Value	UNCERTAINTY_VALUE	NUMBER (6.4)		
Primary Qualifier Code	QUALIFIER_CODE	CHARACTER (8)		
Primary Qualifier Type	QUALIFIER_TYPE	CHARACTER (8)		
Half MDL Substitution Indicator	LT_HALF_MDL_IND	CHARACTER (1)		
EPA Region Concurrence Indicator	EPA_CONCURRENCE_IND	CHARACTER (1)		
Exclusion Indicator	EXCLUSION_IND	CHARACTER (1)		
Exclusion Date	EXCLUSION_DATE	DATE		
Freeze Indicator	FREEZE_IND	CHARACTER (3)		
Action Indicator	ACTION_IND	CHARACTER (1)		
Session Screening Group	SCREENING_GROUP_NUM	NUMBER (12.0)		
Session User	ORACLE_USER_ID	CHARACTER (40)		
Session Date/Time	SESSION_DATE	DATE		

3.21 Raw Qualifier Details

3.21.1 Description

The Raw Qualifier Details view contains qualification information about the raw sample. Types of qualification are: null data, exceptional event, natural events, and quality assurance. A Raw Qualifier Details record is uniquely identified by the combination of monitor, sample date/time, and qualifier. Its parent is the Raw Data view.

3.21.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Sample Date/Time	SAMPLING_BEGIN_DATETIME	DATE	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	√
Qualifier Code	QUALIFIER_CODE	CHARACTER (8)	√	√

3.22 Precision Data

3.22.1 Description

The Precision Data view contains the precision check results for monitors for a pollutant. Precision checks are determined by performing repeated measurements of ambient-level "calibration" gases at two-week intervals for continuous analyzers, or by obtaining duplicate results from collocated samplers for manual methods. Precision Data record is uniquely identified by the combination of monitor and date. Its parent is the Monitor Protocols view.

3.22.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Precision Date	PREC_DATE	DATE	√	√
Precision ID	PREC_ID	NUMBER (2.0)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	
Precision Class	AUDIT_CLASS	CHARACTER (20)	√	
Precision Scale	PREC_SCALE	NUMBER (1.0)	√	
Precision Sample ID	PREC_SAMPLE_ID	CHARACTER (10)		
Actual Value	ACTUAL_VALUE	NUMBER (5.5)	√	
Actual Method	ACTUAL_METHODOLOGY_CODE	CHARACTER (8)		
Indicated Value	INDICATED_VALUE	NUMBER (5.5)	√	
Indicated Method	INDICATED_METHODOLOGY_CODE	CHARACTER (8)	√	
Percent Difference	PERCENT_DIFF	NUMBER	√	
Collocated POC	COLLOCATED_POC	NUMBER (2.0)		
Agency Performing FRM Audit	AGENCY_CODE	CHARACTER (8)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.23 Accuracy Data

3.23.1 Description

The Accuracy Data view contains the accuracy audits results for monitors for a pollutant. Accuracy assessments indicate the agreement between an analyzer measurement and a known audit standard concentration for continuous analyzers, or the agreement between an observed value and a known or reference value for manual methods. Accuracy Data record is uniquely identified by the combination of monitor, audit class, accuracy type, date and audit ID. Its parent is the Monitor Protocols view.

3.23.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Accuracy Date	ACC_DATE	DATE	√	√
Audit Class	AUDIT_CLASS	CHARACTER (20)	√	√
Accuracy Type	ACC_TYPE	CHARACTER (20)	√	√
Audit ID	ACC_AUDIT_ID	NUMBER (2.0)	√	√
Audit Level	LEVEL_NUM	NUMBER (2.0)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	
Local Primary Standard	LOCAL_PRI_STD	CHARACTER (30)	√	
Audit Type	AUDIT_TYPE	CHARACTER (20)	√	
Year Represented	YEAR_REPRESENTED	NUMBER (4.0)	√	
Quarter Represented	QTR_REPRESENTED	NUMBER (1.0)	√	
Audit Sample ID	AUDIT_SAMPLE_ID	CHARACTER (10)		
Expiration Date	EXPIRATION_DATE	DATE		
Audit Scheduled	AUDIT_SCHEDULED	DATE		
Zero Span	ZERO_SPAN_VALUE	NUMBER (5.5)		
Zero Span Scale	ZERO_SPAN_SCALE	NUMBER (1.0)		
Audit Scale	ACC_AUDIT_SCALE	NUMBER (1.0)	√	
Actual Value	ACTUAL_VALUE	NUMBER (5.5)	√	
Indicated Value	INDICATED_VALUE	NUMBER (5.5)	√	
Percent Difference	PERCENT_DIFF	NUMBER	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.24 Blanks Data

3.24.1 Description

The Blanks Data view contains information about field and trip blank assessments. A Blanks Data record is uniquely identified by the combination of monitor and date. Its parent is the Monitor Protocols view.

3.24.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Blank Date/Time	BLANK_DATE_TIME	DATE	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	
Blank Type	BLANK_TYPE	CHARACTER (20)	√	
Blank Value	BLANK_VALUE	NUMBER	√	
Blank Scale	BLANK_SCALE	NUMBER (1.0)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.25 Comments

3.25.1 Description

The Comments view contains free text narratives for sites, and monitors. Its parent is either the Sites or Monitors views.

3.25.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
State-County-Site	SITE_ID	CHARACTER (11)		
Monitor ID	MONITOR_ID	CHARACTER (20)		
Sequence Number	SEQUENCE_NUM	NUMBER (12.0)	√	
Text	COMMENT_TEXT	CHARACTER (255)	√	

3.26 NAAQS Averages

3.26.1 Description

The NAAQS Averages view contains system-calculated averages of hourly sample data for some criteria pollutants. The averages are used for evaluation of compliance with National Ambient Air Quality Standards (NAAQS). The averages cover multi-hour periods <= 24. A NAAQS Averages record is uniquely identified by the combination of monitor, date/time duration, and exceptional data type. Its parent is the Monitors view.

3.26.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
NAAQS Date/Time	NAAQS_AVG_DATETIME	DATE	√	√
Duration Code	DURATION_CODE	CHARACTER (8)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER (10.0)	√	√
Arithmetic Mean	NAAQS_ARITH_MEAN	NUMBER (5.5)	√	

3.27 Daily Summaries

3.27.1 Description

The Daily Summaries view contains calculated values of concentrations of monitor samples, which have been summarized for a day, sampling duration, and exceptional data indicator combination. A Daily Summaries record is uniquely identified by the combination of monitor, date duration, and exceptional data type. Its parent is the Monitors view.

3.27.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Collection Date	DAILY_COLL_DATE	DATE	√	√
Duration Code	DURATION_CODE	CHARACTER (8)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER (10.0)	√	√
Arithmetic Mean	DAILY_ARITH_MEAN	FLOAT		
Count of Observations	DAILY_OBS_CNT	NUMBER (10.0)		
Percent of Observations	DAILY_OBS_PCT	NUMBER (6.4)		
Summary Criteria Indicator	DAILY_CRITERIA_IND	CHARACTER (1)		
Maximum Value	DAILY_MAX_SAMPLE_VALUE	NUMBER (5.5)		
Hour of Maximum Value	DAILY_MAX_COLL_HOUR	NUMBER (2.0)		
Count of Primary Exceedances	VALUES_GT_PRI_LEVEL_DS	NUMBER (10.0)		
Count of Secondary Exceedances	VALUES_GT_SEC_LEVEL_DS	NUMBER (10.0)		
Count of Non-Overlapping Exceedances	NON_OVERLAPPING_AVG_GT_STD	NUMBER (10.0)		
Daily Rank	DAILY_RANKING_NUM	NUMBER (3.0)		

3.28 Quarterly Summaries

3.28.1 Description

The Quarterly Summaries view contains calculated values of concentrations of monitor samples, which have been summarized for a quarter, sampling duration, and exceptional data indicator combination. A Quarterly Summaries record is uniquely identified by the combination of monitor, year, quarter, duration, and exceptional data type. Its parent is the Monitors view.

3.28.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Summary Year	QTR_YEAR	NUMBER (4.0)	√	√
Summary Quarter	QTR_NUM	NUMBER (1.0)	√	√
Duration Code	DURATION_CODE	CHARACTER (8)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER (10.0)	√	√
Arithmetic Mean	QTR_ARITH_MEAN	FLOAT		
Count of Observations	QTR_OBS_CNT	NUMBER (10.0)		
Percent of Observations	QTR_OBS_PCT	NUMBER (6.4)		
Summary Criteria Indicator	QTR_CRITERIA_IND	CHARACTER (1)		

3.29 Annual Summaries

3.29.1 Description

The Annual Summaries view contains calculated values of concentrations of monitor samples, which have been summarized for a year, sampling duration, and exceptional data indicator combination. An Annual Summaries record is uniquely identified by the combination of monitor, year, duration, and exceptional data type. Its parent is the Monitors view; its child view is Summary Maximums, Summary Percentiles, and Summary Protocols.

3.29.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Summary Year	ANNUAL_SUMMARY_YEAR	NUMBER (4.0)	√	√
Duration Code	DURATION_CODE	CHARACTER (8)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER (10.0)	√	√
Arithmetic Mean	ANNUAL_ARITH_MEAN	NUMBER (5.5)		
Arithmetic Standard Deviation	ANNUAL_ARITH_STDDV	NUMBER (5.5)		
Geometric Mean	ANNUAL_GEOM_MEAN	NUMBER (5.5)		
Geometric Standard Deviation	ANNUAL_GEOM_STDDV	NUMBER (5.5)		
Weighted Arithmetic Mean	WEIGHTED_ARITH_MEAN	NUMBER (5.5)		
Summary Criteria Indicator	ANNUAL_CRITERIA_IND	CHARACTER (1)		
Direct Entry Indicator	ANNUAL_DIRECT_ENTRY_IND	CHARACTER (3)		
Certification Indicator	CERT_IND	CHARACTER (3)		
Count of Observations	ANNUAL_OBS_CNT	NUMBER (10.0)		
Percent of Observations	ANNUAL_OBS_PCT	NUMBER (6.4)		
Count of Null Data Records	NULL_DATA_OBS_CNT	NUMBER (10.0)		
Count of Exceptional Events	EXCEPTIONAL_DATA_CNT	NUMBER (10.0)		
Count of Primary Exceedances	VALUES_GT_PRI_LEVEL	NUMBER (10.0)		
Count of Secondary Exceedances	VALUES_GT_SEC_LEVEL	NUMBER (10.0)		
Count of Days Greater Than Alert Level	DAYS_GT_ALERT_LEVEL	NUMBER (10.0)		
Count of Half-MDL Substitutions	OBS_CNT_LT_HALF_MDL	NUMBER (10.0)		
Count of Non-Overlapping Exceedances	NON_OVERLAPPING_AVG_GT_STD	NUMBER (10.0)		
Count of Methods	SUMMARY_METHOD_CNT	NUMBER (12.0)		

Name	Database Field	Type (Length)	Req'd	Key
Count of Valid Days	VALID_DAY_CNT	NUMBER (3.0)		
Count of Required Days	REQ_MONITORING_CNT	NUMBER (3.0)		
Count of Missing Days Assumed Less Than Standard	MISSING_DAYS_ASSUMED_LT_STD	NUMBER (3.0)		
Estimate of Days Greater Than Standard	EST_DAYS_GT_STD	NUMBER (3.2)		
Minimum Collection Frequency	COLL_FREQ_CODE	CHARACTER (8)		
Minimum Sample Value	MIN_SAMPLE_VALUE	NUMBER (5.5)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.30 Summary Maximums

3.30.1 Description

The Summary Maximums view contains information about a predetermined number of the highest values that were recorded by a monitor within a year. A Summary Maximums record is uniquely identified by the combination of monitor, year, duration, exceptional data type, maximum type, and level. Its parent is the Annual Summaries view.

3.30.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Summary Year	ANNUAL_SUMMARY_YEAR	NUMBER (4.0)	√	√
Duration Code	DURATION_CODE	CHARACTER (8)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER (10.0)	√	√
Maximum Indicator	MAX_IND	NUMBER (3.0)	√	√
Maximum Level	MAX_LEVEL	NUMBER (4.0)	√	√
Maximum Value	MAX_SAMPLE_VALUE	NUMBER (5.5)	√	
Maximum Value Date/Time	MAX_COLL_DATETIME	DATE	√	

3.31 Summary Percentiles

3.31.1 Description

The Summary Percentiles view contains information about predetermined percentiles that were calculated for a monitor within a year. A Summary Percentiles record is uniquely identified by the combination of monitor, year, duration, exceptional data type, and percentile. Its parent is the Annual Summaries view.

3.31.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Summary Year	ANNUAL_SUMMARY_YEAR	NUMBER (4.0)	√	√
Duration Code	DURATION_CODE	CHARACTER (8)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER (10.0)	√	√
Percentile	PERCENTILE_NUM	NUMBER	√	√
Percentile Sample Value	PERCENTILE_SAMPLE_VALUE	NUMBER	√	

3.32 Summary Protocols

3.32.1 Description

The Summary Protocols view documents the protocols that were used for a monitor within a year. A Summary Protocols record is uniquely identified by the combination of monitor, year, duration, exceptional data type, and monitor protocol. Its parent is the Annual Summaries view.

3.32.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Summary Year	ANNUAL_SUMMARY_YEAR	NUMBER (4.0)	√	√
Duration Code	DURATION_CODE	CHARACTER (8)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER (10.0)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	√

3.33 Monitor Precision Summaries

3.33.1 Description

The Monitor Precision Summaries view contains information about yearly and quarterly precision statistics for monitors for a pollutant by a reporting organization. Types of information that are calculated are: number of checks, mean, standard deviation, and number of valid collocated sample pairs. A Monitor Precision Summaries record is uniquely identified by the combination of monitor, reporting organization, class and time period. Its parent is the Monitor Agency Roles view; its child view is Precision Summary Protocols.

3.33.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Precision Class	AUDIT_CLASS	CHARACTER (20)	√	√
Summary Year	PREC_YEAR	NUMBER (4.0)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	
Mean	PREC_MEAN	NUMBER (6.4)	√	
Standard Deviation	PREC_STDDV	NUMBER (6.4)	√	
Count of Checks	PREC_CHECK_CNT	NUMBER (3.0)	√	
Count of Valid Collocated Data Pairs	VALID_CLOC_DATA_PAIR_CNT	NUMBER (3.0)	√	

3.34 Precision Summary Protocols

3.34.1 Description

The Precision Summary Protocols view contains information about the protocols used to assess precision checks for a monitor for a year by a reporting organization. A Precision Summary Protocols record is uniquely identified by the combination of monitor, reporting organization, class, time period, and monitor protocols. Its parent is the Monitor Precision Summaries view.

3.34.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Precision Class	AUDIT_CLASS	CHARACTER (20)	√	√
Summary Year	PREC_YEAR	NUMBER (4.0)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	√

3.35 Reporting Organization Precision Summaries

3.35.1 Description

The Reporting Organization Precision Summaries view contains information about yearly and quarterly precision statistics for reporting organizations and pollutants. Types of information that are calculated are: number of checks, mean, standard deviation, number of valid collocated sample pairs, and lower and upper probability limits or confidence intervals. A Reporting Organization Precision Summaries record is uniquely identified by the combination of reporting organization, parameter, class and time period. Its parent is the Agencies and Parameters views.

3.35.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Parameter	PARAMETER_CODE	CHARACTER (5)	√	√
Precision Class	AUDIT_CLASS	CHARACTER (20)	√	√
Summary Year	PREC_YEAR	NUMBER (4.0)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	
Mean	PREC_MEAN	NUMBER (6.4)	√	
Standard Deviation	PREC_STDDV	NUMBER (6.4)		
Count of Checks	PREC_CHECK_CNT	NUMBER (3.0)	√	
Count of Valid Collocated Data Pairs	VALID_CLOC_DATA_PAIR_CNT	NUMBER (3.0)		
Count of Analyzers	ANALYZER_CNT	NUMBER (12.0)	√	
Count of Collocated Sites	CLOC_SITE_CNT	NUMBER (12.0)	√	
Lower Probability/Confidence Limit	PREC_LOWER_PROB_LIMIT	NUMBER (6.4)	√	
Upper Probability/Confidence Limit	PREC_UPPER_PROB_LIMIT	NUMBER (6.4)	√	

3.36 Monitor Accuracy Summaries

3.36.1 Description

The Monitor Accuracy Summaries view contains information about yearly and quarterly accuracy statistics for reporting organizations and pollutants. Types of information that are calculated are: number of audits. A Monitor Accuracy Summaries record is uniquely identified by the combination of monitor, reporting organization, class, type, and time period. Its parent is the Agencies Roles view; its child view is Accuracy Summary Protocols.

3.36.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	√
Audit Class	AUDIT_CLASS	CHARACTER (20)	√	√
Accuracy Type	ACC_TYPE	CHARACTER (20)	√	√
Summary Year	ACC_SUMMARY_YEAR	NUMBER (4)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Local Primary Standard	LOCAL_PRI_STD	CHARACTER (30)	√	
Audit Type	AUDIT_TYPE	CHARACTER (30)	√	
Audit Level	LEVEL_NUM	NUMBER (2)	√	
Count of Audits	AUDIT_CNT	NUMBER (12)	√	
Mean	ACC_MEAN	NUMBER (5.5)		

3.37 Accuracy Summary Protocols

3.37.1 Description

The Accuracy Summary Protocols view documents the protocols used to collect accuracy audits for a monitor for a year or quarter. An Accuracy Summary Protocols record is uniquely identified by the combination of monitor, reporting organization, class, type, time period, and monitor protocol. Its parent is the Monitor Accuracy Summaries view.

3.37.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	√
Audit Class	AUDIT_CLASS	CHARACTER (20)	√	√
Accuracy Type	ACC_TYPE	CHARACTER (20)	√	√
Summary Year	ACC_SUMMARY_YEAR	NUMBER (4)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4)	√	√

3.38 Reporting Organization Accuracy Summaries

3.38.1 Description

The Reporting Organization Accuracy Summaries view contains information about yearly and quarterly accuracy statistics for reporting organizations and pollutants. Types of information that are calculated are: number of audits, mean, standard deviation, and lower and upper probability limits or confidence intervals. A Reporting Organization Accuracy Summaries record is uniquely identified by the combination of reporting organization, parameter, recording mode, class, type, and time period. Its parent is the Agencies and Parameters views.

3.38.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Parameter	PARAMETER_CODE	CHARACTER (5)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	√
Audit Class	AUDIT_CLASS	CHARACTER (20)	√	√
Accuracy Type	ACC_TYPE	CHARACTER (20)	√	√
Summary Year	ACC_SUMMARY_YEAR	NUMBER (4)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Local Primary Standard	LOCAL_PRI_STD	CHARACTER (30)	√	
Audit Type	AUDIT_TYPE	CHARACTER (30)	√	
Audit Level	LEVEL_NUM	NUMBER (2)	√	
Count of Audits	AUDIT_CNT	NUMBER (12)	√	
Mean	ACC_MEAN	NUMBER (5.5)		
Standard Deviation	ACC_STDDV	NUMBER (7.5)		
Lower Probability/Confidence Limit	ACC_LOWER_PROB_LIMIT	NUMBER (6.4)		
Upper Probability/Confidence Limit	ACC_UPPER_PROB_LIMIT	NUMBER (6.4)		

4 AQS Fields

4.1 Accuracy Date

4.1.1 Description

The calendar date for which the accuracy audit information pertains.

4.1.2 Source

User-specified, via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.1.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.1.4 Uses

Accuracy Data

4.1.5 Value Assignment

The field is only assigned a date, with the time portion defaulting to 00:00:00.

4.2 Accuracy Type

4.2.1 Description

A description of the type of accuracy test performed.

4.2.2 Source

User-specified, via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.2.3 Attributes

Type: Character
Length: 20
Required: Yes

4.2.4 Uses

Accuracy Data
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.2.5 Value Assignment

4.2.5.1 Accuracy Data

Must be an entry in the *Accuracy Types* view.

4.2.5.2 Monitor & Reporting Organization Accuracy Summaries

Represents the *Accuracy Type* value assigned to all *Accuracy Data* records that are aggregated in the summary record.

4.3 Action Date

4.3.1 Description

The date that administrative action was taken by EPA headquarters.

4.3.2 Source

User-specified, via AQS Maintain Monitor (L2).

4.3.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.3.4 Uses

Monitor Type Assignments

4.3.5 Value Assignment

Applies only to the assignment of the monitor types National Air Monitoring Station (NAMS) or Photochemical Assessment Monitoring System (PAMS).

4.4 Action Indicator

4.4.1 Description

Indicates the data manipulation action to be performed by the transaction.

4.4.2 Source

User-specified, via Raw Data (RD) or Composite Data (RC) Transactions AQ2, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.4.3 Attributes

Type: Character
Length: 1
Required: No

4.4.4 Uses

Raw Data
Composite Data

4.4.5 Value Assignment

4.4.5.1 Pre-Production Status

A value is required when the *Raw Data* or *Composite Data* record is at pre-production status, (i.e., the *Status Indicator* value is "R" or "S"). The valid values are:

I - Insert
U - Update
D - Delete

4.4.5.2 Production Status

The field must be null when the *Raw Data* or *Composite Data* record is at production status, (i.e., the *Status Indicator* value is "P").

4.5 Action Reason

4.5.1 Description

A code indicating the reason for negative actions by EPA headquarters with regard to a monitor.

4.5.2 Source

User-specified, via AQS Maintain Monitor (L2).

4.5.3 Attributes

Type: Character
Length: 8
Required: No

4.5.4 Uses

Monitor Type Assignments

4.5.5 Value Assignment

Must be an entry in the *Action Reasons* view.

4.6 Action Type

4.6.1 Description

The type of administrative action taken by EPA headquarters.

4.6.2 Source

User-specified, via AQS Maintain Monitor (L2).

4.6.3 Attributes

Type: Character
Length: 8
Required: No

4.6.4 Uses

Monitor Type Assignments

4.6.5 Value Assignment

Must be an entry in the *Action Types* view.

4.7 Actual Method

4.7.1 Description

Identifies the particular method for collecting and analyzing a precision check value.

4.7.1.1 Analytical

The method used to collect and analyze the known gaseous concentration with which the sampler is challenged.

4.7.1.2 Flow

The method used to collect and analyze the known flow rate with which the sampler is challenged.

4.7.1.3 Collocated

The method used to collect and analyze the ambient air sample from the primary sampler.

4.7.2 Source

User-specified, via Precision Data (RP) Transaction AQ2, or AQS Maintain Precision (L61).

4.7.3 Attributes

Type: Character
Length: 3
Required: Yes

4.7.4 Uses

Precision Data

4.7.5 Value Assignment

The *Actual Method* value, in combination with the *Parameter* value, must exist in the *Sampling Methodologies* view.

4.8 Actual Value

4.8.1 Description

4.8.1.1 Analytical

The standard gaseous concentration value with which the sampler is challenged.

4.8.1.2 Flow

The standard flow rate value with which the monitor is challenged.

4.8.1.3 Collocated

The concentration produced from the primary sampler, (i.e., routine monitor), in a collocated sampler pair.

4.8.2 Source

For a precision check, user-specified, via Precision Data (RP) Transaction AQ2, or AQS Maintain Precision (L61). For an accuracy audit, user-specified, via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.8.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.8.4 Uses

Precision Data
Accuracy Data

4.8.5 Value Assignment

4.8.5.1 Analytical Check

The *Actual Value* for a precision check must not exceed the maximum value allowed for the *Parameter*.

4.8.5.2 Analytical Audit

The *Actual Value* for an analytical audit must fall within the range of standard concentrations specified for the *Parameter* at the given *Audit Level.*

4.8.5.3 Collocated Check

The *Actual Value* for a precision check must not exceed the maximum value allowed for the *Parameter*.

4.9 Agency Code

4.9.1 Description

An agency responsible for performing a role for the monitor.

4.9.2 Source

User-specified, via Monitor Agency Roles (MD) Transaction AQ2, or AQS Maintain Monitor (L2).

4.9.3 Attributes

Type: Character
Length: 8
Required: Yes

4.9.4 Uses

Monitor Agency Roles

4.9.5 Value Assignment

Must be an entry on the *Agencies* view, and, in combination with *State Code*, on the *State Agencies* view.

4.10 Agency Role Begin Date

4.10.1 Description

The date on which the agency began performance of the role for the monitor. For the role of reporting, it also indicates the date that precision and accuracy data applies to the agency as reporting organization.

4.10.2 Source

User-specified, via Monitor Agency Roles (MD) Transaction AQ2, or AQS Maintain Monitor (L2).

4.10.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.10.4 Uses

Monitor Agency Roles

4.10.5 Value Assignment

4.10.5.1 Reporting Role

Agency Role Begin Date is required when the *Agency Role Name* is "REPORTING".

4.10.5.2 Other Roles

Agency Role Begin Date is optional when the *Agency Role Name* is other than "REPORTING".

4.11 Agency Role End Date

4.11.1 Description

The date on which the agency ended a period of performance of the role for the monitor. For the role of reporting, it also indicates the last date that precision and accuracy data applies to the agency as reporting organization.

4.11.2 Source

User-specified, via Monitor Agency Roles (MD) Transaction AQ2, or AQS Maintain Monitor (L2).

4.11.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.11.4 Uses

Monitor Agency Roles

4.12 Agency Role Name

4.12.1 Description

Classification of an agency's role in regard to the monitor.

4.12.2 Source

User-specified, via Monitor Agency Roles (MD) Transaction AQ2, or AQS Maintain Monitor (L2).

4.12.3 Attributes

Type: Character
Length: 20
Required: Yes

4.12.4 Uses

Monitor Agency Roles

4.12.5 Value Assignment

Must be "REPORTING", "COLLECTING", or "ANALYZING".

4.13 Agency Performing FRM Audit

4.13.1 Description

The agency submitting precision data resulting from a Federal Reference Method (FRM) audit of the manual method for Particulate Matter (PM)-2.5 monitoring. This agency is commonly an Environmental Protection Agency (EPA) laboratory or independent laboratory.

4.13.2 Source

User-specified, via Precision Data (RP) Transaction AQ2, or AQS Maintain Precision (L61).

4.13.3 Attributes

Type: Character
Length: 8
Required: No

4.13.4 Uses

Precision Data

4.13.5 Value Assignment

The *Agency Performing FRM Audit* value must exist on the *Agencies* view.

4.14 Alternate MDL

4.14.1 Description

The method detectable limit (MDL) defined for the monitor by the reporting agency, which supercedes the EPA-defined method detectable limit for the designated methodology.

4.14.2 Source

User-specified, via the Raw Data (RD), Composite Data (RC), or Monitor Protocols (MK) Transactions (AQ2), or via Maintain Monitor (L2).

4.14.3 Attributes

Type: Number
Length: 5.5
Required: No

4.14.4 Uses

Monitor Protocols

4.15 Applicable NAAQS Indicator

4.15.1 Description

An indication of whether the data from a monitor in a monitor planning area should be compared to either the short-term or annual National Ambient Air Quality Standards (NAAQS), or both.

4.15.2 Source

User-specified, via Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.15.3 Attributes

Type: Character
Length: 3
Required: No

4.15.4 Uses

Monitor Pollutant Areas

4.15.5 Value Assignment

The valid values are:

S – Short-Term
A – Annual
B - Both

4.15.5.1 Monitor Pollutant Areas

Applicable NAAQS Indicator is required for Monitor Planning Areas (PM2.5).

4.15.5.2 Default

Applicable NAAQS Indicator is not allowed for other than Monitor Planning Areas (PM2.5).

4.16 Arithmetic Mean (Annual)

4.16.1 Description

The measure of central tendency obtained from the sum of the observed pollutant data values or National Ambient Air Quality Standards (NAAQS) averages in the yearly data set divided by the number of values that comprise the sum for the yearly data set.

4.16.2 Source

System-generated during the Post process, or user-specified via the Annual Summaries (RS) Transaction (AQ2) or Maintain Annual Summaries (L9).

4.16.3 Attributes

Type: Number
Length: 5.5
Required: No

4.16.4 Uses

Annual Summaries

4.16.5 Value Assignment

4.16.5.1 1-Hour & 8-Hour Ozone

$$u = \sum_{j=1}^{n} d_j \Big/ v$$

where:

u = mean,
d = valid 1-hour or 8-hour daily maximum occurring in effective monitoring season,
v = *Count of Valid Days*.

4.16.5.2 Non-Ozone National Ambient Air Quality Standards (NAAQS) Durations

Not valued.

4.16.5.3 Default

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = mean,
s = sample value,
n = *Count of Observations (Annual)*.

4.17 Arithmetic Mean (Daily)

4.17.1 Description

The measure of central tendency obtained from the sum of the observed pollutant data values or National Ambient Air Quality Standards (NAAQS) averages in the daily data set divided by the number of values that comprise the sum for the daily data set.

4.17.2 Source

System-generated during the Post process.

4.17.3 Attributes

Type: Number
Length: 5.5
Required: No

4.17.4 Uses

Daily Summaries

4.17.5 Value Assignment

4.17.5.1 Hourly & NAAQS Durations

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = mean,
s = sample value or valid *NAAQS Arithmetic Mean*,
n = *Count of Observations (Daily)*.

4.17.5.2 Daily Criteria

$$u = s$$

where:

u = mean,
s = sample value.

4.18 Arithmetic Mean (NAAQS)

4.18.1 Description

The measure of central tendency obtained from the sum of the observed pollutant data values in National Ambient Air Quality Standards (NAAQS) hourly interval divided by the number of values that comprise the sum for the NAAQS hourly interval.

4.18.2 Source

System-generated during the Post process.

4.18.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.18.4 Uses

NAAQS Averages

4.18.5 Value Assignment

4.18.5.1 8-Hour Ozone

Where there are between 6 and 8 hourly samples in an 8-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = sample value,
n = number of samples.

Where there are less than 6 samples in an 8-hour period, (i.e. at least 75% of the required data is not present):

$$u = \frac{\left(\sum_{j=1}^{n} s_j + \left((8 - n) * h \right) \right)}{8}$$

where:

u= arithmetic mean,
s = 1-hour sample value,
h = ½ method detectable limit (MDL) substitution,
n = number of 1-hour sample values,

and u exceeds the standard.

4.18.5.2 8-Hour Carbon Monoxide

Where there are between 6 and 8 samples in an 8-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = sample value,
n = number of sample values.

4.18.5.3 3-Hour Sulfur Dioxide

When there are 3 hourly samples in a 3-hour block:

$$u = \sum_{j=1}^{3} s_j \Big/ 3$$

where:

u = arithmetic mean,
s = sample value.

When there less than 3 hourly samples in a 3-hour block:

$$u = \sum_{j=1}^{n} s_j \Big/ 3$$

where:

u= arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values,

and u exceeds the secondary standard.

4.18.5.4 24-Hour Sulfur Dioxide

When there are between 18 and 24 hourly samples in an 24-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = sample value,
n = number of samples.

When there are less than 18 hourly samples in a 24-hour period:

$$u = \sum_{j=1}^{n} s_j \Big/ 24$$

where:

u= arithmetic mean,
s = sample value,
n = number of samples,

and u exceeds the primary standard.

4.18.5.5 24-Hour PM10

Where there are between 18 and 24 hourly samples in an 24-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values.

Where there are less than 18 hourly samples in a 24-hour period:

$$u = \sum_{j=1}^{n} s_j \Big/ 24$$

where:

u= arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values,

and u, when rounded to -1 places, (i.e., to the nearest 10), exceeds the primary standard.

4.18.5.6 24-Hour PM2.5

Where there are between 18 and 24 hourly samples in an 24-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values.

Where there are less than 18 hourly samples in a 24-hour period:

$$u = \sum_{j=1}^{n} s_j \Big/ 24$$

where:

u= arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values,

and u, when rounded to zero places, i.e., to the nearest integer, exceeds the primary standard.

4.19 Arithmetic Mean (Quarterly)

4.19.1 Description

The measure of central tendency obtained from the sum of the observed pollutant data values in the quarterly data set divided by the number of values that comprise the sum for the quarterly data set.

4.19.2 Source

System-generated during the Post process.

4.19.3 Attributes

Type: Number
Length: 5.5
Required: No

4.19.4 Uses

Quarterly Summaries

4.19.5 Value Assignment

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = mean,
s = sample value or valid *NAAQS Arithmetic Mean*,
n = *Count of Observations (Quarterly)*.

4.20 Arithmetic Standard Deviation

4.20.1 Description

The measure of the dispersion about the central tendency of a pollutant that is the square root of the arithmetic mean of the squares of the variation of each data value from the arithmetic mean of the data values of the yearly data set.

4.20.2 Source

System-generated during the Post process, or user-specified via the Annual Summaries (RS) Transaction (AQ2) or Maintain Annual Summaries (L9).

4.20.3 Attributes

Type: Number
Length: 5.5
Required: No

4.20.4 Uses

Annual Summaries

4.20.5 Value Assignment

4.20.5.1 1-Hour & 8-Hour Ozone

$$\sigma = \sqrt{\frac{\left(\left(v * \sum_{j=1}^{v} d_j^2\right) - \left(\sum_{j=1}^{v} d_j\right)^2\right)}{\left(v * (v-1)\right)}}$$

where:

σ = standard deviation,
d = valid 1-hour or 8-hour daily maximum occurring in effective monitoring season,
v = *Count of Valid Days*,

and $v > 1$.

If the number of valid days is exactly 1, then the standard deviation is assigned a value of 0.

4.20.5.2 Non-Ozone National Ambient Air Quality Standards (NAAQS) Durations

No value assigned.

4.20.5.3 Default

$$\sigma = \sqrt{\frac{\left(\left(n * \sum_{j=1}^{n} s_j^{\,2}\right) - \left(\sum_{j=1}^{n} s_j\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

σ = standard deviation,
s = hourly sample value,
n = *Count of Observations (Annual)*,

and $n > 1$.

If the number of samples is exactly 1, then the standard deviation is assigned a value of 0.

4.21 Audit Class

4.21.1 Description

Description of the class of audit taken at the monitor.

4.21.2 Source

User-specified via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62), or system-generated via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.21.3 Attributes

Type: Character
Length: 20
Required: Yes

4.21.4 Uses

Accuracy Data
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.21.5 Value Assignment

4.21.5.1 Accuracy Data

Must be a value on the *Audit Classes* view.

4.21.5.2 Monitor & Reporting Organization Accuracy Summaries

Represents the *Audit Class* value assigned to all *Accuracy Data* records that are aggregated in the summary record.

4.22 Audit ID

4.22.1 Description

A sequentially assigned number used to identify a unique measurement data group for a monitor on a specific date.

4.22.2 Source

User-specified, via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.22.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.22.4 Uses

Accuracy Data

4.23 Audit Level

4.23.1 Description

A number identifying a regulatory-specified concentration range for the Parameter, or, when there is no level defined, a sequential identifier use to differentiate multiple value pairs in an accuracy audit.

4.23.2 Source

Derived from User-specified via the Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.23.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.23.4 Uses

Accuracy Data

4.23.5 Value Assignment

The values of *Audit Level* are derived from *Level n* fields on the RA transaction, with *Other Level* being assigned a value of 5. From Maintain Accuracy (L62), the levels are explicitly entered by the user.

4.24 Audit Sample ID

4.24.1 Description

The unique identity (ID) number of the reference sample used to challenge the instrument.

4.24.2 Source

User-specified via the Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.24.3 Attributes

Type: Character
Length: 10
Required: No

4.24.4 Uses

Accuracy Data

4.25 Audit Scale

4.25.1 Description

The number of digits to the right of the decimal point of the accuracy audit.

4.25.2 Source

Derived from User-specified via the Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.25.3 Attributes

Type: Number
Length: 1
Required: Yes

4.25.4 Uses

Accuracy Data

4.25.5 Value Assignment

The value is derived from the number of digits to the right of the decimal point for the corresponding audit value pair in the Accuracy Data (RA) Transaction AQ2, or on the L62 form.

4.26 Audit Scheduled

4.26.1 Description

The initial date that the performance audit was scheduled.

4.26.2 Source

User-specified via the Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.26.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.26.4 Uses

Accuracy Data

4.27 Audit Type

4.27.1 Description

Description of who performed the audit and how the audit standard was certified.

4.27.2 Source

User-specified via the Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.27.3 Attributes

Type: Character
Length: 20
Required: Yes

4.27.4 Uses

Accuracy Data
Monitor Accuracy Summaries
Reporting Organization Accuracy Summaries

4.27.5 Value Assignment

4.27.5.1 Accuracy Data

Must be a value on the *Audit Types* view.

4.27.5.2 Monitor & Reporting Organization Accuracy Summaries

The most frequently assigned audit type for accuracy audits aggregated in the summary record.

4.28 AQCR

4.28.1 Description

Specifies in which of the 247 Air Quality Control Regions (AQCRs) the monitoring site is located.

4.28.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.28.3 Attributes

Type: Character
Length: 8
Required: No

4.28.4 Uses

Sites

4.28.5 Value Assignment

Must be a value on the *AQCR* view, and, in combination with the *State Code* and *County Code*, on the *AQCR Counties* view.

4.29 Beam Length

4.29.1 Description

The length of the beam projected between the transmitter and the receiver at the site, in meters.

4.29.2 Source

User-specified via the Open Paths (AC) Transaction AQ2, or AQS Maintain Site (L1).

4.29.3 Attributes

Type: Number
Length: 8.2
Required: No

4.29.4 Uses

Open Paths

4.30 Blank Date/Time

4.30.1 Description

The calendar date and time at which the blanks data was recorded.

4.30.2 Source

User-specified via the Blanks Data (RB) Transaction AQ2, or AQS Maintain Blanks (L53).

4.30.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.30.4 Uses

Blanks Data

4.31 Blank Scale

4.31.1 Description

The number of digits to the right of the decimal point of the accuracy audit.

4.31.2 Source

User-specified via the Blanks Data (RB) Transaction AQ2, or AQS Maintain Blanks (L53).

4.31.3 Attributes

Type: Number
Length: 1
Required: Yes

4.31.4 Uses

Blanks Data

4.31.5 Value Assignment

The value is derived from the number of digits to the right of the decimal point in the Blanks Data (RB) Transaction AQ2, or on the L53 form.

4.32 Blanks Type

4.32.1 Description

The type of blanks data being recorded.

4.32.2 Source

User-specified via Blanks Data (RB) Transaction AQ2, or AQS Maintain Blanks (L53).

4.32.3 Attributes

Type: Character
Length: 20
Required: Yes

4.32.4 Uses

Blanks Data

4.32.5 Value Assignment

Must be a value on the *Blanks Types* view, (i.e., "TRIP" or "FIELD").

4.33 Blank Value

4.33.1 Description

The reported blanks value.

4.33.2 Source

User-specified via Blanks Data (RB) Transaction AQ2, or AQS Maintain Blanks (L53).

4.33.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.33.4 Uses

Blanks Data

4.34 Block

4.34.1 Description

The U.S. Census Bureau block within which the site is located.

4.34.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.34.3 Attributes

Type: Character
Length: 4
Required: No

4.34.4 Uses

Sites

4.34.5 Value Assignment

In combination with *State Code*, *County Code*, *Census Tract*, and *Block Group*, must be a value on the *Blocks* view.

4.35 Block Group

4.35.1 Description

The U.S. Census Bureau block group within which the site is located.

4.35.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.35.3 Attributes

Type: Character
Length: 1
Required: No

4.35.4 Uses

Sites

4.35.5 Value Assignment

In combination with *State Code*, *County Code*, and *Census Tract*, must be a value on the *Block Groups* view.

4.36 Census Tract

4.36.1 Description

The U.S. Census Bureau census tract/block numbering area within which the site is located.

4.36.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.36.3 Attributes

Type: Character
Length: 6
Required: No

4.36.4 Uses

Sites

4.36.5 Value Assignment

In combination with *State Code* and *County Code*, must be a value on the *Census Tracts* view.

4.37 Certification Indicator

4.37.1 Description

An indication that the accuracy of the information on the annual summary record has been certified by the owner.

4.37.2 Source

User-specified via the Certification (J) form.

4.37.3 Attributes

Type: Character
Length: 3
Required: No

4.37.4 Uses

Annual Summaries

4.37.5 Value Assignment

The only valid value is "Y".

4.38 City Code

4.38.1 Description

The city within whose legal boundaries the monitoring site is located.

4.38.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.38.3 Attributes

Type: Character
Length: 5
Required: Yes

4.38.4 Uses

Sites

4.38.5 Value Assignment

In combination with *State Code*, must be a value on the *Cities* table, and with both *State Code* and *County Code*, a value on the *County Cities* view.

4.39 Class I Area

4.39.1 Description

The Class One Area within which the site is located. A Class One Area is a geographic area recognized by EPA as being of the highest environmental quality and requiring maximum protection.

4.39.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.39.3 Attributes

Type: Character
Length: 8
Required: No

4.39.4 Uses

Sites

4.39.5 Value Assignment

Must be a value on the *Class One Areas* view.

4.40 CMSA Represented

4.40.1 Description

The Consolidated Metropolitan Statistical Area (CMSA) from which the concentrations originated, not the location of the monitor.

4.40.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction AQ2, or AQS Maintain Monitor (L2).

4.40.3 Attributes

Type: Character
Length: 8
Required: No

4.40.4 Uses

Monitor Objectives

4.40.5 Value Assignment

Must have a value if neither *MSA Represented* nor *Urban Area Represented* is valued. Conversely, may not have a value if either *MSA Represented* or *Urban Area Represented* is valued. If valued, that value must exist on the *CMSA*s view.

4.41 Collection Date

4.41.1 Description

The date for which sample data is summarized.

4.41.2 Source

System-generated as part of the Post process.

4.41.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.41.4 Uses

Daily Summaries

4.42 Collection Frequency Code

4.42.1 Description

The frequency, according to which sample observations are to be made, specified as the amount of time that elapses between observations. Indicates how often 24-hour samples are taken, e.g., daily, every third day, stratified random, etc.

4.42.2 Source

User-specified via the Monitor Protocol (MK) or Raw Data (RD) Transaction AQ2, or AQS Maintain Monitor (L2).

4.42.3 Attributes

Type: Character
Length: 8
Required: No

4.42.4 Uses

Monitor Protocols

4.42.5 Value Assignment

The value must be on the *Collection Frequencies* view, and, in conjunction with *Duration Code*, *Parameter*, *Method Code*, *Unit*, and *Composite Type*, on the *Protocols* view.

4.43 Collocated POC

4.43.1 Description

The Parameter Occurrence Code (POC) of the duplicate sampler. Only applies to collocated data where the duplicate value is a recorded daily raw data point.

4.43.2 Source

User-specified via the Precision Data (RP) Transaction AQ2, or AQS Maintain Precision Data (L61).

4.43.3 Attributes

Type: Number
Length: 2
Required: No

4.43.4 Uses

Precision Data

4.43.5 Value Assignment

In conjunction with *State Code*, *County Code*, *Site ID*, and *Parameter*, the value must exist on the *Monitors* view.

4.44 Collocation Begin Date

4.44.1 Description

The beginning date of the time period during which a collocated monitor pair recorded precision and accuracy data. Used to determine data completeness.

4.44.2 Source

User-specified via the Monitor Protocol (MJ) Transaction AQ2, or AQS Maintain Monitor (L2).

4.44.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.44.4 Uses

Monitor Collocation Periods

4.45 Collocation End Date

4.45.1 Description

The ending date of the time period during which a collocated monitor pair recorded precision and accuracy data. Used to determine data completeness.

4.45.2 Source

User-specified via the Monitor Protocol (MJ) Transaction AQ2, or AQS Maintain Monitor (L2).

4.45.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.45.4 Uses

Monitor Collocation Periods

4.46 Comment Text

4.46.1 Description

A free-form narrative to be used in anyway the user desires, but generally to explain or further describe the related item, i.e., site, monitor, or sample.

4.46.2 Source

User-specified, via Maintain Site (L1), Maintain Monitor (L2), Maintain Raw Data (L54), or Maintain Composite Data (L51).

4.46.3 Attributes

Type: Character
Length: 255
Required: Yes

4.46.4 Uses

Comments

4.47 Community Monitoring Zone

4.47.1 Description

A sequential number assigned to an optional averaging area with an established, defined boundary within a monitor planning area that has relatively uniform concentration of annual PM-2.5. Community monitoring zones do not cross geographical lines.

4.47.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.47.3 Attributes

Type: Number
Length: 4.0
Required: No

4.47.4 Uses

Monitor Pollutant Areas

4.47.5 Value Assignment

4.47.5.1 Monitor Planning Areas

May be assigned a value when the *Pollutant Area Type* value is not Monitor Planning Area.

4.47.5.2 Default

May not be assigned a value when the *Pollutant Area Type* value is not Monitor Planning Area.

4.48 Compliance Date

4.48.1 Description

The date on which the current status of the monitor's compliance with the regulation was achieved.

4.48.2 Source

User-specified via the Monitor Regulatory Compliance (MI) Transaction AQ2, or AQS Maintain Monitor (L2).

4.48.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.48.4 Uses

Monitor Regulatory Compliances

4.48.5 Assignment

4.49 Compliance Indicator

4.49.1 Description

The compliance status of a monitor with respect to an EPA regulation.

4.49.2 Source

User-specified via the Monitor Regulatory Compliance (MI) Transaction AQ2, or AQS Maintain Monitor (L2).

4.49.3 Attributes

Type: Character
Length: 3
Required: Yes

4.49.4 Uses

Monitor Regulatory Compliances

4.49.5 Value Assignment

Regulation Code	Valid Values
ST	Y, N
RM	Y, N
FC	Y, N
QA	Y, N, C
SC	Y, N, W

4.50 Composite Period

4.50.1 Description

Indicates the time period within the year to which the observation applies. It is expressed in units that may be inferred from the Composite Type.

4.50.2 Source

User-specified via the Composite Data (RC) Transaction AQ2, or AQS Maintain Composite Data (L51).

4.50.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.50.4 Uses

Composite Data
Composite Qualifier Details

4.51 Composite Type

4.51.1 Description

The time period over which samples are composited, or the frequency of submitting composite samples.

4.51.2 Source

User-specified via the Monitor Protocol (MK) or Composite Data (RC) Transactions AQ2, or AQS Maintain Monitor (L2).

4.51.3 Attributes

Type: Character
Length: 10
Required: No

4.51.4 Uses

Composite Type

4.51.5 Value Assignment

The value must be on the *Composite Types* view, and, in conjunction with *Duration Code*, *Parameter*, *Method Code*, *Unit*, and *Collection Frequency Code*, on the *Protocols* view.

4.52 Composite Year

4.52.1 Description

The calendar year for which the observation was reported.

4.52.2 Source

User-specified via the Composite Data (RC) Transaction AQ2, or AQS Maintain Composite Data (L51).

4.52.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.52.4 Uses

Composite Data
Composite Qualifier Details

4.53 Congressional District

4.53.1 Description

The Congressional district within which the site is located.

4.53.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.53.3 Attributes

Type: Number
Length: 12.0
Required: No

4.53.4 Uses

Sites

4.53.5 Value Assignment

The value must exist on the *Congressional Districts* view.

4.54 Count of Analyzers

4.54.1 Description

The average number of approved analyzers in the network.

4.54.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.54.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.54.4 Uses

Reporting Organization Precision Summaries

4.54.5 Value Assignment

4.54.5.1 Gaseous or Flow

The number of monitors for which checks were recorded during the time period.

4.54.5.2 Collocated

The number of collocated sampler pairs that recorded collocated value pairs during the time period, (i.e., the Count of Collocated Sites).

4.54.5.3 Federal Reference Method (FRM) audits

Assigned a default value of 0.

4.55 Count of Collocated Sites

4.55.1 Description

The average number of sites having collocated samplers.

4.55.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.55.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.55.4 Uses

Reporting Organization Precision Summaries

4.55.5 Value Assignment

4.55.5.1 Collocated

The number of collocated sampler pairs that recorded collocated value pairs during the time period.

4.55.5.2 Gaseous, Flow, or Federal Reference Method (FRM) Audits

Assigned a default value of 0.

4.56 Count of Audits (Monitor Accuracy Summary)

4.56.1 Description

The number of accuracy audits recorded during the time period for the monitor.

4.56.2 Source

System-generated via Accuracy Data (RA) Transaction AQ2, or Maintain Accuracy (L61).

4.56.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.56.4 Uses

Monitor Accuracy Summaries

4.57 Count of Audits (Reporting Organization Accuracy Summary)

4.57.1 Description

The number of accuracy audits recorded during the time period.

4.57.2 Source

System-generated via Accuracy Data (RA) Transaction AQ2, or Maintain Accuracy (L61).

4.57.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.57.4 Uses

Reporting Organization Accuracy Summaries

4.57.5 Value Assignment

If either quarter in either half of the year has an *Audit Count* of 1, then the audits for both quarters will be counted and reported with the second quarter for the half (Q2 or Q4). However, for the first quarter in the half (Q1 or Q3), the audits will still be counted and reported with that quarter.

4.58 Count of Exceptional Events

4.58.1 Description

The number of data points in the annual data set affected by events.

4.58.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction AQ2 or Maintain Annual Summaries (L7).

4.58.3 Attributes

Type: Number
Length: 10.0
Required: Yes

4.58.4 Uses

Annual Summaries

4.58.5 Value Assignment

4.58.5.1 Observed Durations

A count of the *Raw Data* or *Composite Data* records for the monitor and year whose *Primary Qualifier Type* value is either "EX", (for exceptional event qualifiers), or "NAT", (for natural event qualifiers).

4.58.5.2 National Ambient Air Quality Standards (NAAQS) Durations

Not valued.

4.59 Count of Days Greater Than Alert Level

4.59.1 Description

The number of days within the year where the monitor had sample values that exceeded the alert level for the pollutant.

4.59.2 Source

System-generated via the Post Process.

4.59.3 Attributes

Type: Number
Length: 3.0
Required: No

4.59.4 Uses

Annual Summaries

4.59.5 Value Assignment

Comparisons to alert levels are based on sample values converted to the pollutant's standard unit.

4.59.5.1 1-Hour Ozone

The number of days where the hourly *Maximum Value (Daily)* is greater than 0.2 parts per million (ppm).

4.59.5.2 8-Hour Carbon Monoxide

The number of days where the 8-Hour *Maximum Value (Daily)* is greater than 15 ppm.

4.59.5.3 Daily & 24-Hour Sulfur Dioxide

The number of days where daily sample value or 24-hour block average is greater than 0.3 ppm.

4.59.5.4 Annual Nitrogen Dioxide

If the *Arithmetic Mean (Annual)* exceeds 0.6 ppm, then 1; otherwise, 0.

4.59.5.5 Daily & 24 Hour PM10

The number of days where either the daily sample value or 24-hour block average is greater than 350 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC).

4.59.5.6 Default

Not valued.

4.60 Count of Half-MDL Substitutions

4.60.1 Description

The number of samples in the calendar year whose calculated standard value was less than the applicable method detectable limit (MDL), and for which ½ of that MDL was substituted for the calculated standard value.

4.60.2 Source

System-generated as part of the Post process.

4.60.3 Attributes

Type: Number
Length: 10.0
Required: No

4.60.4 Uses

Annual Summaries

4.60.5 Value Assignment

4.60.5.1 Hourly PM2.5

Not valued.

4.60.5.2 National Ambient Air Quality Standards (NAAQS) Durations

Not valued.

4.60.5.3 Default

The count of *Raw Data* or *Composite Data* records for the year that are flagged as having had half the MDL substituted (*Half MDL Substitution Indicator* = "Y") for the calculated *Standard Sample Value*, where the latter value is less than the MDL.

4.61 Count of Methods

4.61.1 Description

The number of methods used to collect samples for the monitor during the year.

4.61.2 Source

System-generated via the Post process.

4.61.3 Attributes

Type: Number
Length: 12.0
Required: No

4.61.4 Uses

Annual Summaries

4.61.5 Value Assignment

4.61.5.1 Observed Durations

Always valued.

4.61.5.2 National Ambient Air Quality Standards (NAAQS) Durations

Never valued.

4.62 Count of Missing Days Assumed Less Than Standard

4.62.1 Description

The number of invalid or missing days in the effective monitoring season whose daily maximums are assumed to be less than or equal to the standard.

4.62.2 Source

System-generated via the Post process.

4.62.3 Attributes

Type: Number
Length: 3.0
Required: No

4.62.4 Uses

Annual Summaries

4.62.5 Value Assignment

4.62.5.1 1-Hour Ozone

A missing or invalid day is assumed to be less than the standard when either of the following conditions exists:

- The daily maximums on the days immediately preceding, and immediately succeeding, the missing day were less than, or equal to, 75% of the standard.
- The number of valid samples for the day was less than 18, and the sum of the following is greater than, or equal, to 18, i.e., 75% of the possible values:

  - Number of valid samples;
  - Number of null samples that were both flagged as not likely to exceed the standard, and for which the Regional Office has indicated concurrence;
  - Number of omitted samples that were flagged with event qualifiers, and for which the Regional Office has indicated concurrence.

4.62.5.2 8-Hour Ozone

A missing or invalid day is assumed to be less than the standard for the following condition:

- The number of valid 8-hour arithmetic averages for the day was less than 18, and the sum of the following is greater than, or equal, to 18, i.e., 75% of the possible values:

  - Number of valid 8-hour arithmetic averages;
  - Number of missing 8-hour arithmetic averages that would be valid if excluded samples (null or event-qualified) were included, where those excluded samples have concurrence from the EPA Regional Office.

4.62.5.3 Default

Not valued.

4.63 Count of Non-Overlapping Exceedances (Annual)

4.63.1 Description

The number of primary exceedances with 8 or more hours between any other exceedances.

4.63.2 Source

System-generated via the Post process.

4.63.3 Attributes

Type: Number
Length: 10.0
Required: No

4.63.4 Uses

Annual Summaries

4.63.5 Value Assignment

4.63.5.1 8-Hour Carbon Monoxide

Always valued with an integer of 0 or greater.

4.63.5.2 Default

Not valued.

4.64 Count of Non-Overlapping Exceedances (Daily)

4.64.1 Description

The number of primary exceedances with 8 or more hours between any other exceedances.

4.64.2 Source

System-generated via the Post process.

4.64.3 Attributes

Type: Number
Length: 10.0
Required: No

4.64.4 Uses

Daily Summaries

4.64.5 Value Assignment

4.64.5.1 8-Hour Carbon Monoxide

Always valued with an integer of 0 or greater.

4.64.5.2 Default

Not valued.

4.65 Count of Observations (Annual)

4.65.1 Description

The number of raw data values that are the basis for the summary values.

4.65.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction AQ2 or Maintain Annual Summaries (L7).

4.65.3 Attributes

Type: Number
Length: 10.0
Required: No

4.65.4 Uses

Annual Summaries

4.66 Count of Observations (Daily)

4.66.1 Description

The number of raw data values that are the basis for the summary values.

4.66.2 Source

System-generated via the Post process.

4.66.3 Attributes

Type: Number
Length: 10.0
Required: No

4.66.4 Uses

Daily Summaries

4.67 Count of Observations (Quarterly)

4.67.1 Description

The number of raw data values that are the basis for the summary values.

4.67.2 Source

System-generated via the Post process.

4.67.3 Attributes

Type: Number
Length: 10.0
Required: No

4.67.4 Uses

Quarterly Summaries

4.68 Count of Checks (Monitor Precision Summary)

4.68.1 Description

The number of precision checks, (gaseous, flow, collocated, Federal Reference Method, i.e., FRM) recorded during the time period.

4.68.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.68.3 Attributes

Type: Number
Length: 3.0
Required: No

4.68.4 Uses

Monitor Precision Summaries

4.69 Count of Checks (Reporting Organization Precision Summary)

4.69.1 Description

The number of precision checks, (gaseous, flow, collocated, Federal Reference Method, i.e., FRM) recorded during the time period.

4.69.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.69.3 Attributes

Type: Number
Length: 12.0
Required: No

4.69.4 Uses

Reporting Organization Precision Summaries

4.70 Count of Valid Collocated Data Pairs (Monitor Precision Summary)

4.70.1 Description

The number of valid collocated value pairs recorded during the time period.

4.70.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.70.3 Attributes

Type: Number
Length: 3.0
Required: No

4.70.4 Uses

Monitor Precision Summaries

4.70.5 Value Assignment

4.70.5.1 Collocated

A valid collocated value pair is one where both the primary and duplicate value exceeds the minimum collocated value defined for the parameter on the Parameters view. The minimum values for criteria pollutants are:

Parameter		Minimum
Code	**Name**	**Value**
11101	TSP	20 µg/m^3 SC
12128	Lead	.015 µg/m^3 SC
42401	SO2	.01717 ppm
42602	NO2	.01593 ppm
81102	PM10	20 µg/m^3 SC
88101	PM2.5	6 µg/m^3 LC

where:

ppm - parts per million
µg/m^3 SC - micrograms per cubic meter (standard conditions)
µg/m^3 LC - micrograms per cubic meter (local conditions).

If a minimum collocated value is not defined for the parameter, then the value pair is assumed valid.

4.70.5.2 Default

The field is not applicable to gaseous or flow checks, in which cases it is assigned a default value of 0.

4.71 Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)

4.71.1 Description

The number of valid collocated value pairs recorded during the time period.

4.71.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.71.3 Attributes

Type: Number
Length: 12.0
Required: No

4.71.4 Uses

Reporting Organization Precision Summaries

4.71.5 Value Assignment

4.71.5.1 Collocated

A valid collocated value pair is one where both the primary and duplicate value exceeds the minimum collocated value defined for the parameter on the Parameters view. The minimum values for criteria pollutants are:

Parameter		Minimum
Code	**Name**	**Value**
11101	TSP	20 µg/m^3 SC
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88101	PM2.5	6 µg/m^3 LC

where:

ppm - parts per million
µg/m^3 SC - micrograms per cubic meter (standard conditions)
µg/m^3 LC - micrograms per cubic meter (local conditions).

If a minimum collocated value is not defined for the parameter, then the value pair is assumed valid.

4.71.5.2 Default

The field is not applicable to gaseous or flow checks, in which cases it is assigned a default value of 0.

4.72 Count of Primary Exceedances (Annual)

4.72.1 Description

The number of exceedances of the primary standard during the year for the monitor.

4.72.2 Source

System-generated via the Post process.

4.72.3 Attributes

Type: Number
Length: 10.0
Required: No

4.72.4 Uses

Annual Summaries

4.72.5 Value Assignment

4.72.5.1 1-Hour Ozone

The number of days in the effective monitoring season when the *Maximum Value (Daily)* was greater than, or equal to, 0.125 parts per million (ppm).

4.72.5.2 8-Hour Ozone

The number of days in the effective monitoring season where the *Maximum Value (Daily)* was greater than, or equal to, 0.085 ppm.

4.72.5.3 1-Hour Carbon Monoxide

The number of samples in the year that were greater than, or equal to, 35.5 ppm.

4.72.5.4 8-Hour Carbon Monoxide

The number of 8-hour *Arithmetic Mean (NAAQS)* values in the year that were greater than, or equal to, 9.5 ppm.

4.72.5.5 Daily & 24-Hour Sulfur Dioxide

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 0.145 ppm.

4.72.5.6 Daily & 24-Hour PM10

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 155 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC).

4.72.5.7 Daily & 24-Hour PM2.5

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 65 micrograms per cubic meter – local conditions (μg/m^3 LC).

4.72.5.8 Nitrogen Dioxide

If the *Arithmetic Mean (Annual)* is greater than, or equal to, 0.053 ppm, then 1; otherwise, 0.

4.72.5.9 Lead

The number of *Arithmetic Mean (Quarterly)* values, that are greater than, or equal to, 1.55 μg/m^3 SC.

4.72.5.10 Default

Not valued.

4.73 Count of Primary Exceedances (Daily)

4.73.1 Description

The number of exceedances of the primary standard during the 24-hour period for the monitor.

4.73.2 Source

System-generated via the Post process.

4.73.3 Attributes

Type: Number
Length: 10.0
Required: No

4.73.4 Uses

Daily Summaries

4.73.5 Value Assignment

4.73.5.1 1-Hour Ozone

The number of samples within the 24-hour period that were greater than, or equal to, 0.125 parts per million (ppm).

4.73.5.2 8-Hour Ozone

The number of 8-hour *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 0.085 ppm.

4.73.5.3 1-Hour Carbon Monoxide

The number of samples in the 24-hour period that were greater than, or equal to, 35.5 ppm.

4.73.5.4 8-Hour Carbon Monoxide

The number of 8-hour *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 9.5 ppm.

4.73.5.5 Daily & 24-Hour Sulfur Dioxide

The number of samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 0.145 ppm, i.e., 0 or 1.

4.73.5.6 Daily & 24-Hour PM10

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 155 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC), i.e., 0 or 1.

4.73.5.7 Daily & 24-Hour PM2.5

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 65 micrograms per cubic meter – local conditions ($\mu g/m^3$ LC), i.e., 0 or 1.

4.73.5.8 Default

Not valued.

4.74 Count of Secondary Exceedances (Annual)

4.74.1 Description

The number of exceedances of the secondary standard during the year for the monitor.

4.74.2 Source

System-generated via the Post process.

4.74.3 Attributes

Type: Number
Length: 10.0
Required: No

4.74.4 Uses

Annual Summaries

4.74.5 Value Assignment

4.74.5.1 1-Hour Ozone

The number of days in the effective monitoring season when the *Maximum Value (Daily)* was greater than, or equal to, 0.125 parts per million (ppm).

4.74.5.2 8-Hour Ozone

The number of days in the effective monitoring season where the *Maximum Value (Daily)* was greater than, or equal to, 0.085 ppm.

4.74.5.3 1-Hour Carbon Monoxide

The number of samples in the year that were greater than, or equal to, 35.5 ppm.

4.74.5.4 8-Hour Carbon Monoxide

The number of 8-hour *Arithmetic Mean (NAAQS)* values in the year that were greater than, or equal to, 9.5 ppm.

4.74.5.5 3-Hour Sulfur Dioxide

The number of 3-hour *Arithmetic Mean (NAAQS)* values in the year that were greater than, or equal to, 0.55 ppm.

4.74.5.6 Daily & 24-Hour PM10

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 155 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC).

4.74.5.7 Daily & 24-Hour PM2.5

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 65 micrograms per cubic meter – local conditions (µg/m^3 LC).

4.74.5.8 Nitrogen Dioxide

If the *Arithmetic Mean (Annual)* is greater than, or equal to, the secondary standard of 0.053 ppm, then 1; otherwise, 0.

4.74.5.9 Lead

The number of *Arithmetic Mean (Quarterly)* values that were greater than, or equal to, 1.55 µg/m^3 SC.

4.74.5.10 Default

Not valued.

4.75 Count of Secondary Exceedances (Daily)

4.75.1 Description

The number of exceedances of the secondary standard during the 24-hour period for the monitor.

4.75.2 Source

System-generated via the Post process.

4.75.3 Attributes

Type: Number
Length: 10.0
Required: No

4.75.4 Uses

Daily Summaries

4.75.5 Value Assignment

4.75.5.1 1-Hour Ozone

The number of samples within the 24-hour period that were greater than, or equal to, 0.125 parts per million (ppm).

4.75.5.2 8-Hour Ozone

The number of 8-hour *Arithmetic Mean (NAAQS)* values in the 24-hour period that were greater than, or equal to, 0.085 ppm.

4.75.5.3 1-Hour Carbon Monoxide

The number of samples in the 24-hour period that were greater than, or equal to, 35.5 ppm.

4.75.5.4 8-Hour Carbon Monoxide

The number of 8-hour *Arithmetic Mean (NAAQS)* values in the 24-hour period that were greater than, or equal to, 9.5 ppm.

4.75.5.5 3-Hour Sulfur Dioxide

The number of 3-hour *Arithmetic Mean (NAAQS)* values in the 24-hour period that were greater than, or equal to, 0.55 ppm.

4.75.5.6 Daily & 24-Hour PM10

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 155 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC), i.e., 0 or 1.

4.75.5.7 Daily & 24-Hour PM2.5

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 65 μg/m^3 LC, i.e., 0 or 1.

4.75.5.8 Default

Not valued.

4.76 Count of Null Data Records

4.76.1 Description

The number of null samples that occurred within the calendar year

4.76.2 Source

System-generated during the Post process.

4.76.3 Attributes

Type: Number
Length: 10.0
Required: No

4.76.4 Uses

Annual Summaries

4.76.5 Value Assignment

4.76.5.1 Composite Data

Not valued.

4.76.5.2 National Ambient Air Quality Standards (NAAQS) Durations

Not valued.

4.76.5.3 Default

The count of Raw Data records where the Primary Qualifier Type is "NULL".

4.77 Count of Required Days

4.77.1 Description

The number of required monitoring days during the year.

4.77.2 Source

System-generated via the Post process.

4.77.3 Attributes

Type: Number
Length: 3.0
Required: No

4.77.4 Uses

Annual Summaries

4.77.5 Value Assignment

4.77.5.1 1-Hour & 8-Hour Ozone

The number of active days within the effective monitoring season.

4.77.5.2 Daily PM10 & PM2.5

Scheduled days are the number of days within the year that were scheduled for sampling, as determined by the EPA-defined calendar for the required collection frequency, and which also fall within the period of operation, as defined by sampling periods.

Seasonal and random frequencies are sub-divided in monthly-required frequencies; otherwise, the required frequency applies to a defined period of time. A PM10 or PM2.5 monitor must have a defined collection frequency for each active day, by rule.

The reference point for the EPA calendar is January 4, 1956. For example, in the year 2003, the every 6th day calendar would comprise: 1/3/2003, 1/9/2003, 1/15/2003, etc., and the every 3rd day calendar would comprise: 1/3/2003, 1/6/2003, 1/9/2003, 1/12/2003, etc. For a monitor doing seasonal sampling, with every 6th day sampling in April and every 3rd day sampling in May, both months in 2003, the schedule would be as follows: 4/15/03, 4/21/03, 4/27/03, 5/3/03, 5/6/03, 5/9/03, etc.

4.77.5.3 24-Hour PM10 & PM2.5

The number of active days in the year.

4.77.5.4 Default

Not valued

4.78 Count of Valid Days

4.78.1 Description

The number of required monitoring days where the monitoring criteria were met.

4.78.2 Source

System-generated via the Post process.

4.78.3 Attributes

Type: Number
Length: 3.0
Required: No

4.78.4 Uses

Annual Summaries

4.78.5 Value Assignment

4.78.5.1 1-Hour & 8-Hour Ozone

The number of active days within the effective monitoring season when minimum daily criteria were met, i.e., the *Summary Criteria Indicator (Daily)* value is "Y".

4.78.5.2 Daily PM10

The number of valued strata in the year. (A valued stratum is where at least one observation is made on, or after, a scheduled day, but before the next scheduled day.)

4.78.5.3 Daily PM2.5

The sum of valued, scheduled sampling days, plus make-ups for missing scheduled days. A make-up day is a sample recorded in the same stratum as, or exactly seven days after, a missing scheduled sample. In both conditions, the make-up sample must occur within the same quarter as the missed sample. A maximum of five make-up samples are allowed per quarter. (References: EPA-454/R-99-008 Guideline on Data Handling Conventions for the PM NAAQS; Memorandum: February 3, 1999 Use of Make-Up Samples to Replace Scheduled PM Samples)

4.78.5.4 24-Hour PM10 & PM2.5

The number of valid 24-hour block *Arithmetic Mean (NAAQS)* values within the year.

4.78.5.5 Default

Not valued.

4.79 County Code

4.79.1 Description

A Federal Information Processing Standards (FIPS) code that identifies a county, or equivalent geo-political entity, such as parish or independent city. For foreign countries, it identifies the geo-political equivalent to U. S. states, such as Mexican states or Canadian provinces.

4.79.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.79.3 Attributes

Type: Character
Length: 3
Required: Yes

4.79.4 Uses

Sites
Tangent Roads
Open Paths
Monitors

4.79.5 Value Assignment

The value must exist on the Counties view.

4.80 Created Date

4.80.1 Description

The date when the record was created.

4.80.2 Source

System-generated via any of the AQS transactions, or any of the Maintain modules.

4.80.3 Attributes

Type: Date
Length: Not applicable
Required: No

4.80.4 Uses

Sites
Tangent Roads
Open Paths
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Accuracy Data
Precision Data

4.81 Created User

4.81.1 Description

The Oracle user ID of the user who created the record.

4.81.2 Source

System-generated via any of the AQS transactions, or any of the Maintain modules.

4.81.3 Attributes

Type: Character
Length: 40
Required: No

4.81.4 Uses

Sites
Tangent Roads
Open Paths
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Accuracy Data
Precision Data
Annual Summaries

4.81.5 Value Assignment

The value must exist on the *AIRS User Profiles* view.

4.82 Daily Rank

4.82.1 Description

The rank of the Maximum Value relative to all other maximum values for the year, with 1 signifying the maximum value for the entire year.

4.82.2 Source

System-generated via the Post process.

4.82.3 Attributes

Type: Number
Length: 3.0
Required: No

4.82.4 Uses

Daily Summaries

4.82.5 Value Assignment

Only computed for *Exceptional Data Type* values 0 and 2.

4.83 Date Sampling Began

4.83.1 Description

The date, on which a distinct period of operations, i.e., collection of air quality samples, began for the monitor.

4.83.2 Source

User-specified via the Monitor Sampling Periods (MB) Transaction AQ2, or AQS Maintain Monitor (L2).

4.83.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.83.4 Uses

Sample Periods

4.84 Date Sampling Ended

4.84.1 Description

The date, on which a distinct period of operations, i.e., collection of air quality samples, stopped for the monitor.

4.84.2 Source

User-specified via the Monitor Sampling Periods (MB) Transaction AQ2, or AQS Maintain Monitor (L2).

4.84.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.84.4 Uses

Sample Periods

4.85 Date Site Established

4.85.1 Description

The date on which an air-monitoring site began collecting air quality data.

4.85.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.85.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.85.4 Uses

Sites

4.86 Date Site Terminated

4.86.1 Description

The date on which a monitoring site ceased to operate.

4.86.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.86.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.86.4 Uses

Sites

4.87 Direct Entry Indicator

4.87.1 Description

An indication of whether the summary record was system-generated as part of the Post process, or user-specified via the Annual Summary Data (RS) Transaction AQ2, or AQS Maintain Annual Summary (L7).

4.87.2 Source

System-generated via the Post or Load processes, or AQS Maintain Annual Summary (L7).

4.87.3 Attributes

Type: Character
Length: 3
Required: No

4.87.4 Uses

Annual Summaries

4.87.5 Value Assignment

"N" signifies the record was system-generated via the Post process; "Y" signifies the record was user-specified via either the Annual Summary Data (RS) Transaction AQ2, or AQS Maintain Annual Summary (L7).

4.88 Direction from Central Business District to Site

4.88.1 Description

A representation of the true, as opposed to magnetic, direction of the site from the central business district. If the site is within the central business district, it is a representation of the direction the probe faces.

4.88.2 Source

User-specified, via Sites (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.88.3 Attributes

Type: Character
Length: 3
Required: No

4.88.4 Uses

Sites

4.88.5 Value Assignment

The value must exist in the *Compass Sectors* view.

4.89 Direction from Receiver to Transmitter

4.89.1 Description

The direction from the receiver to the transmitter at the site.

4.89.2 Source

User-specified, via Site Open Path Information (AC) Transaction AQ2, or AQS Maintain Site (L1).

4.89.3 Attributes

Type: Character
Length: 3
Required: Yes

4.89.4 Uses

Open Paths

4.89.5 Value Assignment

The value must exist on the *Compass Sectors* view.

4.90 Direction from Site to Street

4.90.1 Description

The direction from the site to the street at its nearest point.

4.90.2 Source

User-specified, via Site Street Information (AB) Transaction AQ2, or AQS Maintain Site (L1).

4.90.3 Attributes

Type: Character
Length: 3
Required: Yes

4.90.4 Uses

Tangent Roads

4.90.5 Value Assignment

The value must exist on the *Compass Sectors* view.

4.91 Direction to Meteorological Site

4.91.1 Description

The true, as opposed to the magnetic, direction of the meteorological site from this site.

4.91.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.91.3 Attributes

Type: Character
Length: 3
Required: No

4.91.4 Uses

Sites

4.91.5 Value Assignment

The value must exist on the *Compass Sectors* view.

4.92 Direction from Monitor to Probe Obstruction

4.92.1 Description

The direction from the monitor to the obstruction.

4.92.2 Source

User-specified via the Monitor Obstruction Information (MH) Transaction AQ2, or AQS Maintain Monitor (L2).

4.92.3 Attributes

Type: Character
Length: 3
Required: Yes

4.92.4 Uses

Probe Obstructions

4.92.5 Value Assignment

The value must exist on the *Compass Sectors* view.

4.93 Distance from Primary Sampler

4.93.1 Description

The distance, in meters, between a duplicate sampler and the primary sampler in a collocated pair.

4.93.2 Source

User-specified via the Monitor Collocation Period (MJ) Transaction AQ2, or AQS Maintain Monitor (L2).

4.93.3 Attributes

Type: Number
Length: 8.2
Required: No

4.93.4 Uses

Monitor Collocation Periods

4.94 Distance from Central Business District to Site

4.94.1 Description

The distance, in kilometers, to the site from the center of the downtown central business district of the city in which the site is located.

4.94.2 Source

User-specified, via Sites (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.94.3 Attributes

Type: Number
Length: 8.2
Required: No

4.94.4 Uses

Sites

4.95 Distance to Meteorological Site

4.95.1 Description

The distance of the associated meteorological site from the air quality monitoring site, in meters. This information is required if the site has monitors that are part of a Photochemical Assessment Monitoring System (PAMS) network. The associated site need not be an AQS site.

4.95.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.95.3 Attributes

Type: Number
Length: 8.2
Required: No

4.95.4 Uses

Sites

4.96 Distance from Monitor to Probe Obstruction

4.96.1 Description

The distance, in meters, between the probe and obstruction

4.96.2 Source

User-specified via the Monitor Obstruction Information (MH) Transaction AQ2, or AQS Maintain Monitor (L2).

4.96.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.96.4 Uses

Probe Obstructions

4.97 Distance from Monitor to Tangent Road

4.97.1 Description

The distance in meters between the sensing of air sampling equipment at a monitoring site and the nearest edge of the roadway.

4.97.2 Source

User-specified via the Monitor Street Description (MG) Transaction AQ2, or AQS Maintain Monitor (L2).

4.97.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.97.4 Uses

Monitor Tangent Roads

4.98 Dominant Source

4.98.1 Description

The primary source of the pollutant being measured.

4.98.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.98.3 Attributes

Type: Character
Length: 20
Required: No

4.98.4 Uses

Monitors

4.98.5 Value Assignment

The value must exist on the *Dominant Sources* view.

4.99 Duration Code

4.99.1 Description

The length of time used to acquire raw samples that are analyzed by monitors, also called interval.

4.99.2 Source

User-specified via the Monitor Protocol (MK), Raw Data (RD), or Composite Data (RC) Transactions AQ2, or AQS Maintain Monitor (L2), or system-generated via the Post process.

4.99.3 Attributes

Type: Character
Length: 8
Required: Yes

4.99.4 Uses

Monitor Protocols
NAAQS Averages
Daily Summaries
Quarterly Summaries
Annual Summaries

4.99.5 Value Assignment

4.99.5.1 Monitor Protocols

In combination with *Parameter Code*, *Method Code*, *Reported Unit*, *Collection Frequency Code* and *Composite Type*, must exist on the *Protocols* view.

4.99.5.2 NAAQS Averages, Daily, Quarterly & Annual Summaries

For summarized sample data, the duration used to acquire the sample data being summarized. For summarized National Ambient Air Quality Standards (NAAQS) averages, the duration assigned for the NAAQS interval being summarized.

4.100 EPA Region Concurrence Indicator

4.100.1 Description

Indicates whether the appropriate EPA regional office has concurred with either an event-qualified sample value, or a null ozone sample value qualified with the null data code "BG", which signifies "Missing ozone data not likely to exceed level of standard".

4.100.2 Source

Specified by the appropriate EPA regional office via AQS Maintain Concurrence (L8).

4.100.3 Attributes

Type: Character
Length: 1
Required: No

4.100.4 Uses

Raw Data
Composite Data

4.100.5 Value Assignment

The valid values are "Y" and "N". "Y" signifies that the regional office has reviewed the required supporting documentation provided by the data owner, and agrees that use of the qualification is appropriate. Conversely, "N" signifies that they have reviewed that documentation, but disagree with the use of the qualification. (No value signifies that the review has not occurred, or is still in process.)

4.101 EPA Region Evaluation Date

4.101.1 Description

The date on which the most recent regional evaluation of the site for siting criteria occurred.

4.101.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.101.3 Attributes

Type: Date
Length: Not applicable
Required: No

4.101.4 Uses

Sites

4.102 Estimate of Days Greater Than Standard

4.102.1 Description

The estimated number of days greater than the standard is computed and is utilized to determine whether the standard is attained. It is computed for specific pollutants when an exceedance has occurred during the year. The underlying assumption is that missing data is just as likely to exceed the standard as reported data.

4.102.2 Source

System-generated via the Post process.

4.102.3 Attributes

Type: Number
Length: 3.2
Required: No

4.102.4 Uses

Annual Summaries

4.102.5 Value Assignment

The estimate exceedance is rounded to 1 decimal place.

4.102.5.1 1-Hour Ozone

$$e = d + \left(\left(d/v\right) * (r - v - a)\right)$$

where

e = expected days greater than the standard,
r = *Count of Required Days*,
v = *Count of Valid Days*,
a = *Count of Missing Days Assumed Less Than Standard*,
d = *Count of Primary Exceedances.*

4.102.5.2 Daily PM10

$$e = \sum_{q=1}^{4} e_q$$

where:

e = estimated number of exceedances for the year,
e_q = the estimated number of exceedances for calendar quarter q,
q = the index for calendar quarter, q=1, 2, 3 or 4.

The estimate of the expected number of exceedances for a quarter is calculated using the following formula:

$$e = \left(\frac{a}{v}\right) * \sum_{j=1}^{v} \left(\frac{x_j}{n_j}\right)$$

where:

e = the estimated number of exceedances for calendar quarter q,
a = the number of days in calendar quarter q,
v = the number of valued strata in calendar quarter q,
x_j = the number of exceedances in stratum j,
n_j = the number of observations in stratum j.

The quarterly exceedance estimate is set to 1 for a calendar quarter in which the first observed exceedance has occurred if:

1. There was only one exceedance in the calendar quarter,
2. Everyday sampling is subsequently initiated and maintained for 4 calendar quarters, in accordance with 40 CFR 58.13,
3. Data capture of 75 percent is achieved during the required period of everyday sampling.

In addition, if the first exceedance is observed in a calendar quarter in which the monitor is already sampling every day, no adjustment for missing data will be made to the first exceedance if a 75 percent data capture rate was achieved in the quarter in which it was observed.

4.102.5.3 24-Hour PM10

$$e = \sum_{q=1}^{4} e_q$$

where:

e = estimated number of exceedances for the year,
e_q = the estimated number of exceedances for calendar quarter q,
q = the index for calendar quarter, q=1, 2, 3 or 4.

The estimate of the expected number of exceedances for a quarter is calculated using the following formula:

$$e = v * \left(\frac{a}{n}\right)$$

where:

e = the estimated number of exceedances for calendar quarter q,
v = the observed number of exceedances for calendar quarter q,
a = the number of days in calendar quarter q,
n = the number of observations in calendar quarter q.

The quarterly exceedance estimate is set to 1 for a calendar quarter in which the first observed exceedance has occurred if:

1. There was only one exceedance in the calendar quarter,
2. Everyday sampling is subsequently initiated and maintained for 4 calendar quarters in accordance with 40 CFR 58.13,
3. Data capture of 75 percent is achieved during the required period of everyday sampling.

In addition, if the first exceedance is observed in a calendar quarter in which the monitor is already sampling every day, no adjustment for missing data will be made to the first exceedance if a 75 percent data capture rate was achieved in the quarter in which it was observed.

4.102.5.4 Default

Not valued.

4.103 Exceptional Data Type ID

4.103.1 Description

Indication of whether exceptional data exists in the time period being summarized, and whether such exceptional data is included in the reported summary values.

4.103.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction AQ2 or Maintain Annual Summaries (L7).

4.103.3 Attributes

Type: Number
Length: 10.0
Required: Yes

4.103.4 Uses

NAAQS Averages
Daily Summaries
Quarterly Summaries
Annual Summaries

4.103.5 Value Assignment

The meaning of the identifiers are, as follows:

ID	Description
0	No events
1	Events excluded
2	Events included
3	Exceptional events excluded
4	Natural events excluded
5	Events with concurrence excluded
6	Exceptional events with concurrence excluded
7	Natural events with concurrence excluded

The event qualifiers and types are, as follows:

Code	Description	Type
A	High Winds	Natural Event
B	Stratospheric Ozone Intrusion	Natural Event
C	Volcanic Eruptions	Natural Event
D	Sandblasting	Exceptional Event
E	Forest Fire	Natural Event
F	Structural Fire	Exceptional Event
G	High Pollen Count	Natural Event
H	Chemical Spills & Indust. Accidents	Exceptional Event
I	Unusual Traffic Congestion	Exceptional Event
J	Construction/Demolition	Exceptional Event
K	Agricultural Tilling	Exceptional Event
L	Highway Construction	Exceptional Event
M	Rerouting Of Traffic	Exceptional Event
N	Sanding/Salting Of Streets	Exceptional Event
O	Infrequent Large Gatherings	Exceptional Event
P	Roofing Operations	Exceptional Event
Q	Prescribed Burning	Exceptional Event
R	Clean Up After A Major Disaster	Exceptional Event
S	Seismic Activity	Natural Event
U	Sahara Dust	Natural Event

4.104 Exclusion Date

4.104.1 Description

Indicates the date when the data owner flagged the pre-production sample data record to be excluded from the statistical check/critical review, and post processes.

4.104.2 Source

System-generated via the AQS Maintain Raw Data (L54) or AQS Maintain Composite Data (L51) modules.

4.104.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.104.4 Uses

Raw Data
Composite Data

4.104.5 Value Assignment

4.104.5.1 Pre-Production Status

May be valued when the *Status Indicator* is "R" or "S".

4.104.5.2 Production Status

May not be valued when the *Status Indicator* is "P".

4.105 Exclusion Indicator

4.105.1 Description

Indication by the data owner to exclude the pre-production sample data record from the statistical check/critical review, and post processes.

4.105.2 Source

User-specified via the AQS Maintain Raw Data (L54) or AQS Maintain Composite Data (L51) modules.

4.105.3 Attributes

Type: Character
Length: 1
Required: No

4.105.4 Uses

Raw Data
Composite Data

4.105.5 Value Assignment

4.105.5.1 Pre-Production Status

May be assigned a value of "Y" when the *Status Indicator* is "R" or "S".

4.105.5.2 Production Status

May not be assigned a value when the *Status Indicator* is "P".

4.106 Expiration Date

4.106.1 Description

The expiration date for the local primary standard.

4.106.2 Source

User-specified, via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.106.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.106.4 Uses

Accuracy Data

4.107 Freeze Indicator

4.107.1 Description

Indicates whether EPA headquarters has determined that the sample value cannot be changed by the owner of that value.

4.107.2 Source

EPA Headquarters-specified via AQS Restore/Freeze Data (G1).

4.107.3 Attributes

Type: Character
Length: 3
Required: No

4.107.4 Uses

Raw Data
Composite Data

4.107.5 Value Assignment

May be assigned a value of "Y".

4.108 Geometric Mean

4.108.1 Description

The measure of central tendency obtained from the sum of the logarithms of observed sample values in the yearly data set, divided by the number of values, with that result applied as an exponent to 10.

4.108.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction AQ2 or Maintain Annual Summaries (L7).

4.108.3 Attributes

Type: Number
Length: 5.5
Required: No

4.108.4 Uses

Annual Summaries

4.108.5 Value Assignment

4.108.5.1 Total Suspended Particulate (TSP) & Lead

$$\mu = 10^{x}$$

where:

u = mean,
x =

$$\sum_{j=1}^{n} \log_{10} s_j \Big/ n$$

and:

s = sample value,
n = *Count of Observations (Annual)*.

4.108.5.2 Default

Not valued.

4.109 Geometric Standard Deviation

4.109.1 Description

The measure of the dispersion about the central tendency of a pollutant that is based on the variation between the geometric mean of a sample of values and the logarithms of the values themselves.

4.109.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction AQ2 or Maintain Annual Summaries (L7).

4.109.3 Attributes

Type: Number
Length: 7.5
Required: No

4.109.4 Uses

Annual Summaries

4.109.5 Value Assignment

4.109.5.1 Total Suspended Particulate (TSP) & Lead

$$\sigma = 10^{x}$$

where:

σ = standard deviation,
x =

$$\sqrt{\frac{\left(\left(n * \sum_{j=1}^{n} \log_{10} s_j^2\right) - \left(\sum_{j=1}^{n} \log_{10} s_j\right)^2\right)}{\left(n*(n-1)\right)}}$$

where:

s = sample value,
n = *Count of Observations (Annual)*.

and $n > 1$.

If the *Count of Observations (Annual)* is exactly 1, or:

$$n * \sum_{j=1}^{n} \log_{10} s_j^2 < \left(\sum_{j=1}^{n} \log_{10} s_j\right)^2$$

where:

s = sample value,
n = *Count of Observations (Annual)*,

then the standard deviation is assigned a value of 0.

4.109.5.2 Default

Not valued.

4.110 Geometric Type

4.110.1 Description

The geometric entity represented by the air-monitoring site.

This data element is required by EPA Locational Data Policy. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.110.2 Source

The system-generated via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.110.3 Attributes

Type: Character
Length: 50
Required: Yes

4.110.4 Uses

Sites

4.110.5 Value Assignment

Always "POINT".

4.111 Half MDL Substitution Indicator

4.111.1 Description

Indicates whether ½ the applicable method detectable limit (MDL) was substituted for the computed standard sample value when that computed value is less the applicable MDL.

4.111.2 Source

The system-generated via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, or AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.111.3 Attributes

Type: Character
Length: 1
Required: No

4.111.4 Uses

Raw Data
Composite Data

4.111.5 Value Assignment

4.111.5.1 Hourly PM2.5

Will not be assigned a value. (The actual computed standard value is always used in this case.)

4.111.5.2 Default

May be assigned a value of "Y".

4.112 Height of Receiver

4.112.1 Description

The height of the receiver above the ground, in meters.

4.112.2 Source

The system-generated via the Site Open Path Information (AC) Transaction AQ2, or AQS Maintain Site (L1).

4.112.3 Attributes

Type: Number
Length: 8.2
Required: No

4.112.4 Uses

Open Paths

4.113 Height of Transmitter

4.113.1 Description

The height of the transmitter above the ground, in meters.

4.113.2 Source

The system-generated via the Site Open Path Information (AC) Transaction AQ2, or AQS Maintain Site (L1).

4.113.3 Attributes

Type: Number
Length: 8.2
Required: No

4.113.4 Uses

Open Paths

4.114 Horizontal Accuracy

4.114.1 Description

Description of the accuracy of the site coordinates, as a range reported in meters. Only the least accurate measurement needs to be recorded, whether it is latitude or longitude (or Universe Transverse Mercator (UTM) coordinates).

For example, here are accuracy standards for various scale maps, assuming that the maps conform to the national mapping accuracy standards:

1:1,200 ± 3.33 feet
1:2,400 ± 6.67 feet
`1:4,800 ± 13.33 feet
1:10,000 ± 27.78 feet
1:12,000 ± 33.33 feet
1:24,000 ± 40.00 feet
1:63,360 ± 105.60 feet
1:100,000 ± 166.67 feet

Map interpolation would also introduce error.

For Global Positioning System (GPS), the accuracy values vary. The type of GPS used along with operating conditions affect accuracy. The GPS receiver may provide accuracy values associated with specific coordinate readings.

This data element is required by EPA Locational Data Policy (LDP). More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.114.2 Source

User-specified via the via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.114.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.114.4 Uses

Sites

4.115 Horizontal Datum

4.115.1 Description

The edition of North American Datum used as the basis for determining the site coordinates. (The editions of North American Datum establish a network of monuments and reference points defining a mathematical surface from which geographic computations can be made.) The World Geodetic Survey 1984 (WGS84) is one horizontal datum used by many Global Positioning System (GPS) instruments. United States Geological Survey (USGS) maps often use the North Atlantic Datum 1927 (NAD27).

This data element is required by EPA Locational Data Policy. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.115.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.115.3 Attributes

Type: Character
Length: 120
Required: Yes

4.115.4 Uses

Sites

4.115.5 Value Assignment

The value must exist on the *LDP Horizontal Data* view.

4.116 Horizontal Collection Method

4.116.1 Description

The code for the method used to determine the latitude/longitude or Universal Transverse Mercator (UTM) coordinates.

Required by EPA Locational Data Policy (LDP). More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.116.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.116.3 Attributes

Type: Character
Length: 8
Required: Yes

4.116.4 Uses

Sites

4.116.5 Value Assignment

Must be a value on the *LDP Collection Methods* view.

4.117 Hour of Maximum Value

4.117.1 Description

The hour of the day at which the *Maximum Value (Daily)* was reported.

4.117.2 Source

System-generated via the Post process.

4.117.3 Attributes

Type: Number
Length: 2.0
Required: No

4.117.4 Uses

Daily Summaries

4.117.5 Value Assignment

Must be a value between 0 and 23.

4.118 HQ Evaluation Date

4.118.1 Description

The date on which the most recent evaluation of the site by EPA headquarters (HQ) occurred.

4.118.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.118.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.118.4 Uses

Sites

4.119 Indicated Method

4.119.1 Description

Identifies the particular method for collecting and analyzing a precision check value.

4.119.1.1 Analytical

The method used to collect and analyze the known gaseous concentration with which the sampler is challenged.

4.119.1.2 Flow

The method used to collect and analyze the known flow rate with which the sampler is challenged.

4.119.1.3 Collocated

The method used to collect and analyze the ambient air sample from the duplicate sampler.

4.119.2 Source

User-specified, via Precision Data (RP) Transaction AQ2, or AQS Maintain Precision (L61).

4.119.3 Attributes

Type: Character
Length: 3
Required: Yes

4.119.4 Uses

Precision Data

4.119.5 Value Assignment

The *Indicated Method* value, in combination with the *Parameter* value, must exist in the *Sampling Methodologies* view.

4.120 Indicated Value

4.120.1 Description

4.120.1.1 Analytical

The measurement recorded by a monitor for a standard gaseous concentration with which it has been challenged.

4.120.1.2 Flow

The measurement recorded by a monitor for a standard flow rate with which it has been challenged.

4.120.1.3 Collocated

The concentration produced from the duplicate sampler in a collocated sampler pair.

4.120.2 Source

For a precision check, user-specified, via Precision Data (RP) Transaction AQ2, or AQS Maintain Precision (L61). For an accuracy audit, user-specified, via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.120.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.120.4 Uses

Precision Data
Accuracy Data

4.120.5 Value Assignment

4.120.5.1 Analytical Check

The *Indicated Value* for a precision check must not exceed the maximum value allowed for the *Parameter*.

4.120.5.2 Collocated Check

The *Indicated Value* for a precision check must not exceed the maximum value allowed for the *Parameter*.

4.121 Land Use Type

4.121.1 Description

For a site, the prevalent land use within 1/4 mile of that site; for an open path, the prevalent land use under the path of the beam being projected between the receiver and transmitter.

4.121.2 Source

User-specified, via Sites (AA) Transaction AQ2, Open Paths (AC) Transaction AQ2, or AQS Maintain Sites (L1).

4.121.3 Attributes

Type: Character
Length: 20
Required: Yes

4.121.4 Uses

Sites
Open Paths

4.121.5 Value Assignment

The value must exist on the *Land Use Types* view.

4.122 Last Post Date

4.122.1 Description

The last date and time at which the screening group owner, (or data administrator acting as a proxy), ran a Post process that posted data for the monitor.

4.122.2 Source

System-generated via the Post process.

4.122.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.122.4 Uses

Monitors

4.123 Last Sampling Date

4.123.1 Description

The maximum date for which sample date has been reported for the monitor.

4.123.2 Source

System-generated via the Post process.

4.123.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.123.4 Uses

Monitors

4.124 Latitude

4.124.1 Description

The monitoring site's angular distance north or south of the equator measured in decimal degrees. The associated sign specifies the direction of measurement, a positive number indicating north and negative indicating south.

EPA Locational Data Policy (LDP) requires that coordinates be provided for all sites. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.124.2 Source

User-specified, or system-generated from user-specified Universe Transverse Mercator (UTM) coordinates, via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.124.3 Attributes

Type: Number
Length: 2.6
Required: Yes

4.124.4 Uses

Sites

4.125 Local Primary Standard

4.125.1 Description

A description of the source of the local primary standards.

4.125.2 Source

User-specified via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62), or system-generated via Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy (L62).

4.125.3 Attributes

Type: Character
Length: 30
Required: Yes

4.125.4 Uses

Accuracy Data
Monitor Accuracy Summaries
Reporting Organization Accuracy Summaries

4.125.5 Value Assignment

4.125.5.1 Accuracy Data

Must be a value on the *Local Primary Standards* view.

4.125.5.2 Monitor & Reporting Organization Accuracy Summaries

The most frequently assigned value for the population of source data.

4.126 Local Region

4.126.1 Description

A code representing a state-defined geographic/administrative area within which the site is located.

4.126.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.126.3 Attributes

Type: Character
Length: 8
Required: No

4.126.4 Uses

Sites

4.126.5 Value Assignment

In combination with *State Code*, the value must exist on the *Local Regions* view.

4.127 Local Site Name

4.127.1 Description

The locally defined name of the site.

4.127.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.127.3 Attributes

Type: Character
Length: 70
Required: No

4.127.4 Uses

Sites

4.128 Location Setting

4.128.1 Description

A description of the environmental setting within which the site is located.

4.128.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.128.3 Attributes

Type: Character
Length: 50
Required: Yes

4.128.4 Uses

Sites

4.128.5 Value Assignment

The value must exist on the *Location Settings* view.

4.129 Longitude

4.129.1 Description

The monitoring site's angular distance east or west of the prime meridian at Greenwich, measured in decimal degrees. The associated sign specifies the direction of measurement, a positive number indicating east and negative indicating west.

EPA Locational Data Policy requires that coordinates be provided for all sites. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.129.2 Source

User-specified, or system-generated from user-specified Universe Transverse Mercator (UTM) coordinates, via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.129.3 Attributes

Type: Number
Length: 3.6
Required: Yes

4.129.4 Uses

Sites

4.130 Lower Probability/Confidence Limit (Reporting Organization Accuracy Summary)

4.130.1 Description

The lower bound of either a probability distribution, or confidence interval, for the applicable population of accuracy audits.

If either quarter in either half of the year has an Audit Count of 1, then the source data for both quarters in that half will be merged for purposes of calculating the lower probability/confidence limit, and reported with the second quarter of the half (i.e., Q2 or Q4). In this case, there will be no value for the corresponding first quarter in the half (i.e., Q1 or Q3).

4.130.2 Source

System-generated via Accuracy Data (RA) Transaction AQ2, or Maintain Accuracy (L61).

4.130.3 Attributes

Type: Number
Length: 6.4
Required: No

4.130.4 Uses

Reporting Organization Accuracy Summaries

4.130.5 Value Assignment

4.130.5.1 PM2.5 Flow

$$l = D - \left(\frac{S * t_{0.975,\, n-1}}{\sqrt{n}} \right)$$

where:

l = lower 95% confidence limit,
D = *Mean (Reporting Organization Accuracy Summary)*,
S = *Standard Deviation (Reporting Organization Accuracy Summary)*,
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to $n-1$,
n = *Count of Audits (Reporting Organization Accuracy Summary)*.

4.130.5.2 Default

$$l = D - (S * 1.96)$$

where:

l = lower 95% probability limit,
D = Mean (Reporting Organization Accuracy Summary),
S = Standard Deviation (Reporting Organization Accuracy Summary).

4.131 Lower Probability/Confidence Limit (Reporting Organization Precision Summary)

4.131.1 Description

The lower bound of either a probability distribution, or confidence interval, for the applicable population of precision checks.

4.131.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.131.3 Attributes

Type: Number
Length: 6.4
Required: No

4.131.4 Uses

Reporting Organization Precision Summaries

4.131.5 Value Assignment

4.131.5.1 Analytical & Non-PM2.5 Flow

$$l = D - (S * 1.96)$$

where:

l = lower 95% probability limit,
D = Mean (Reporting Organization Precision Summary),
S = Standard Deviation (Reporting Organization Precision Summary).

4.131.5.2 PM2.5 Flow

$$l = D - \left(\frac{S * t_{0.975,\, n-1}}{\sqrt{n}} \right)$$

where:

l = lower 95% confidence limit,
D = Mean (Reporting Organization Precision Summary),
S = Standard Deviation (Reporting Organization Precision Summary),
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to *n-1,*
n = Count of Checks (Reporting Organization Precision Summary).

4.131.5.3 PM2.5 Collocated

$$l = CV\sqrt{\frac{n}{\chi^2_{0.95,\,n}}}$$

where:

l = lower 90% confidence limit,
CV = coefficient of variation,
n = *Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)*,
$X^2_{0.95,n}$ = the 0.95 quantile of the chi-square distribution with degrees of freedom equal to n.

4.131.5.4 Other Collocated

$$l = D - \left(\frac{S * 1.96}{\sqrt{2}}\right)$$

where:

l = lower 95% probability limit,
D = *Mean (Reporting Organization Precision Summary)*,
S = *Standard Deviation (Reporting Organization Precision Summary).*

4.131.5.5 Federal Reference Method (FRM) Audit

$$l = D - \left(\frac{S * t_{0.975,\,n-1}}{\sqrt{n}}\right)$$

where:

l = lower 95% confidence limit,
D = *Mean (Reporting Organization Precision Summary)*,
S = *Standard Deviation (Reporting Organization Precision Summary),*
$t_{0.975,\,n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to $n-1$,
n = *Count of Checks (Reporting Organization Precision Summary)*.

4.132 Maximum Beam Height

4.132.1 Description

The height of the beam (at the highest point from the ground) being projected between the receiver and transmitter at the site, in meters.

4.132.2 Source

User-specified via the Site Open Path Information (AC) Transaction AQ2, or AQS Maintain Site (L1).

4.132.3 Attributes

Type: Number
Length: 8.2
Required: No

4.132.4 Uses

Open Paths

4.133 Maximum Indicator

4.133.1 Description

An indication of the type of maximum value.

4.133.2 Source

System-generated via the Post process.

4.133.3 Attributes

Type: Character
Length: 3
Required: Yes

4.133.4 Uses

Summary Maximums

4.133.5 Value Assignment

Indicator	Description
OVR	Non-overlapping 8-Hour Carbon Monoxide
ACT	Actual 8-Hour Carbon Monoxide
REG	All other cases

4.134 Maximum Level

4.134.1 Description

The numeric rank of a value, relative to other values in the same value set, in descending value order.

4.134.2 Source

System-generated via the Post process.

4.134.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.134.4 Uses

Summary Maximums

4.135 Maximum Value (Annual)

4.135.1 Description

A value in a value set which is of a certain rank, relative to other values in the same value set.

4.135.2 Source

System-generated via the Post process.

4.135.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.135.4 Uses

Summary Maximums

4.135.5 Value Assignment

4.135.5.1 Ozone (1-Hour & 8-Hour)

The ten highest 1-hour or 8-hour *Maximum Value (Daily)* values for the year, regardless of monitoring season or whether daily summary criteria were met.

4.135.5.2 Non-Overlapping 8-Hour Carbon Monoxide

The two highest valid 8-hour *Arithmetic Mean (NAAQS)* values of the year where there is at least one other non-overlapping *Arithmetic Mean (NAAQS)* that is greater than, or equal to, the second highest average, and the dates and hours for which each was computed. (Note: The first actual maximum is always the first non-overlapping maximum.)

In the following example, the fourth actual maximum is the second non-overlapping maximum because, while it overlaps the first and second actual maximums, it does not overlap the third. Since the second actual overlaps the first, and the third overlaps both the first and second, neither one qualifies to be the second non-overlapping maximum.

Actual Rank	8-Hour Average (mg)	Date/Time	Does it overlap all of the higher values?
1	16	Dec. 8 10:01 AM – 6:00 PM	--
2	15	Dec. 8 9:01 AM – 5:00 PM	Yes
3	15	Dec. 8 11:01 AM – 7:00 PM	Yes
4	14	Dec. 8 3:01 AM – 11:00 AM	No
5	13	Nov. 20 10:01 AM – 6:00 PM	
6	13	Nov. 11 11:01 AM – 7:00 PM	
7	13	Feb. 9 9:01 AM – 5:00 PM	
8	12	Nov. 11 10:01 AM – 6:00 PM	
9	12	Oct. 29 10:01 AM – 6: 00 PM	

4.135.5.3 Actual 8-Hour Carbon Monoxide

The ten highest valid 8-hour *Arithmetic Mean (NAAQS)* values of the year, regardless of whether they overlap.

4.135.5.4 Default

The ten highest values for the year.

4.136 Maximum Value (Daily)

4.136.1 Description

The maximum value for the 24-hour period.

4.136.2 Source

System-generated via the Post process.

4.136.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.136.4 Uses

Daily Summaries

4.137 Maximum Value Date/Time

4.137.1 Description

The date and time for which an annual Maximum Value was recorded.

4.137.2 Source

System-generated as part of the Post process.

4.137.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.137.4 Uses

Summary Maximums

4.138 Mean (Monitor Accuracy Summary)

4.138.1 Description

A measure of the central tendency of the applicable population of accuracy audits.

4.138.2 Source

System-generated via Accuracy Data (RA) Transaction AQ2, or Maintain Accuracy (L61).

4.138.3 Attributes

Type: Number
Length: 5.5
Required: No

4.138.4 Uses

Monitor Accuracy Summaries

4.138.5 Value Assignment

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of accuracy (mean),
d_i = *Percent Difference* of a analytical or flow audit,
n = *Count of Audits (Monitor Accuracy Summary)*.

4.139 Mean (Monitor Precision Summary)

4.139.1 Description

A measure of the central tendency of the applicable population of precision checks.

4.139.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.139.3 Attributes

Type: Number
Length: 6.4
Required: Yes

4.139.4 Uses

Monitor Precision Summaries

4.139.5 Value Assignment

4.139.5.1 Analytical & Flow

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of an analytical or flow precision check,
n = *Count of Checks (Monitor Precision Summary)*.

4.139.5.2 Collocated (PM2.5)

$$CV = \sqrt{\frac{\sum_{i=1}^{n} \left(\frac{|d_i|}{\sqrt{2}} \right)^2}{n}}$$

where:

CV = coefficient of variation, i.e., estimate of precision,
d_i = *Percent Difference* of a valid collocated data pair,
n = *Count of Valid Collocated Data Pairs (Monitor Precision Summary)*.

4.139.5.3 Collocated (Other)

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of a valid collocated data pair,
n = *Count of Valid Collocated Data Pairs (Monitor Precision Summary)*.

4.140 Mean (Reporting Organization Accuracy Summary)

4.140.1 Description

A measure of the central tendency of the applicable population of accuracy audits.

4.140.2 Source

System-generated via Accuracy Data (RA) Transaction AQ2, or Maintain Accuracy (L61).

4.140.3 Attributes

Type: Character
Length: 5.5
Required: No

4.140.4 Uses

Reporting Organization Accuracy Summaries

4.140.5 Value Assignment

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of accuracy (mean),
d_i = *Percent Difference* of a analytical or flow audit,
n = *Count of Audits (Reporting Organization Accuracy Summary)*.

If either quarter in either half of the year has a *Count of Audits (Reporting Organization Accuracy Summary)* of 1, then the source data for both quarters in that half will be merged for purposes of calculating the mean, and reported with the second quarter of the half (i.e., Q2 or Q4). In this case, there will be no value for the corresponding first quarter in the half (i.e., Q1 or Q3).

4.141 Mean (Reporting Organization Precision Summary)

4.141.1 Description

A measure of the central tendency of the applicable population of precision checks.

4.141.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.141.3 Attributes

Type: Number
Length: 6.4
Required: No

4.141.4 Uses

Reporting Organization Precision Summaries

4.141.5 Value Assignment

4.141.5.1 Analytical & Flow

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of a analytical or flow precision check,
n = *Count of Checks (Reporting Organization Precision Summary)*.

4.141.5.2 Collocated (PM 2.5)

$$CV = \sqrt{\frac{\sum_{i=1}^{n} \left(\frac{|d_i|}{\sqrt{2}} \right)^2}{n}}$$

where:

CV = coefficient of variation, i.e., estimate of precision,
d_i = *Percent Difference* of a valid collocated data pair,
n = *Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)*.

4.141.6 Collocated (Other)

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of a valid collocated data pair,
n = *Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)*.

4.141.6.1 Federal Reference Method (FRM) Audit

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of an FRM audit pair,
n = *Count of Checks (Reporting Organization Precision Summary)* (i.e., FRM audits).

4.142 Measurement Scale

4.142.1 Description

A denotation of the geographic scope of the air quality measurements made by the monitor. The implication is that the same measurement made elsewhere within the measurement scale would produce an equivalent result to that produced at the monitoring site.

4.142.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.142.3 Attributes

Type: Character
Length: 20
Required: No

4.142.4 Uses

Monitors

4.142.5 Value Assignment

The value must exist on the *Measurement Scales* view.

4.143 Method Code

4.143.1 Description

A code representing a particular method for collecting and analyzing samples of the specified parameter.

4.143.2 Source

User-specified via the Monitor Protocol (MK), Raw Data (RD), or Composite Data (RC) Transactions AQ2, or AQS Maintain Monitor (L2).

4.143.3 Attributes

Type: Character
Length: 8
Required: Yes

4.143.4 Uses

Monitor Protocols

4.143.5 Value Assignment

In combination with *Parameter*, the value must exist on the *Sampling Methodologies* view.

4.144 Meteorological Site ID

4.144.1 Description

The AQS site ID where meteorological data is collected, if not collected at this site.

4.144.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.144.3 Attributes

Type: Character
Length: 11
Required: No

4.144.4 Uses

Sites

4.144.5 Value Assignment

The value must reference an existing record on the *Sites* view.

4.145 Meteorological Site Type

4.145.1 Description

The type of meteorological station identified for the monitoring site. Required for sites with monitors in a Photochemical Assessment Monitoring System (PAMS) network.

4.145.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.145.3 Attributes

Type: Character
Length: 20
Required: No

4.145.4 Uses

Sites

4.145.5 Value Assignment

The value must exist on the *Met Site Types* view.

4.146 Minimum Beam Height

4.146.1 Description

The height of the beam (at the lowest point from the ground) being projected between the receiver and transmitter at the site, in meters.

4.146.2 Source

4.146.3 Source

User-specified via the Site Open Path Information (AC) Transaction AQ2, or AQS Maintain Site (L1).

4.146.4 Attributes

Type: Number
Length: 8.2
Required: No

4.146.5 Uses

Open Paths

4.147 Minimum Collection Frequency

4.147.1 Description

The code for the minimum collection frequency with which the yearly samples were reported.

4.147.2 Source

System-generated via the Post process.

4.147.3 Attributes

Type: Character
Length: 8
Required: No

4.147.4 Uses

Annual Summaries

4.147.5 Value Assignment

4.147.5.1 Daily PM10

Must be assigned a value, which is a code on the *Collection Frequencies* table.

4.147.5.2 24-Hour PM10

Always valued with "1", which signifies "Every Day" on the *Collection Frequencies* table.

4.147.5.3 Default

Not valued.

4.148 Minimum Sample Value

4.148.1 Description

The lowest value for the year.

4.148.2 Source

System-generated via the Post process.

4.148.3 Attributes

Type: Number
Length: 5.5
Required: No

4.148.4 Uses

Annual Summaries

4.148.5 Value Assignment

4.148.5.1 Ozone (1-Hour and 8-Hour)

The lowest 1-hour or 8-hour *Maximum Value (Daily)* that occurred in the year, regardless of monitoring season or whether daily summary criteria were met.

4.148.5.2 Non-Ozone National Ambient Air Quality Standards (NAAQS) Durations

The lowest valid *Arithmetic Mean (NAAQS)* that occurred in the year.

4.148.5.3 Default

The lowest sample data value that occurred in the year.

4.149 Modified Date

4.149.1 Description

The date when the record was last modified.

4.149.2 Source

System-generated via any of the AQS transactions, or any of the Maintain modules.

4.149.3 Attributes

Type: Date
Length: Not applicable
Required: No

4.149.4 Uses

Sites
Tangent Roads
Open Paths
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Accuracy Data
Precision Data

4.150 Modified User

4.150.1 Description

The Oracle ID of the user who last modified the record.

4.150.2 Source

System-generated via any of the AQS transactions, or any of the Maintain modules.

4.150.3 Attributes

Type: Character
Length: 40
Required: No

4.150.4 Uses

Sites
Tangent Roads
Open Paths
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Accuracy Data
Precision Data

4.150.5 Value Assignment

The value must exist on the *AIRS User Profiles* view.

4.151 Monitor ID

4.151.1 Description

The AIRS Monitor ID, which identifies the monitor to which the data applies.

4.151.2 Source

User-specified by any of the following AQ2 transactions:

Basic Monitor Information (MA)
Monitor Sampling Periods (MB)
Monitor Type Information (MC)
Monitor Agency Role (MD)
Monitoring Objective Information (ME)
Monitor Sampling Schedule (MF)
Monitor Street Description (MG)
Monitor Obstruction Information (MH)
Monitor Regulatory Compliance (MI)
Monitor Collocation Period (MJ)
Monitor Protocol (MK)
Composite Raw Data (RC)
Raw Data (RD)
Accuracy Data (RA)
Precision Data (RP)
Annual Summary (RS)

or user-specified via any of the following AQS Maintenance Forms:

Maintain Monitor (L2)
Maintain Composite Data (L51)
Maintain Raw Data (L54)
Maintain Accuracy Data (L62)
Maintain Precision Data (L61)
Maintain Annual Summary (L7)

or system-generated via the Post process, or system-generated via the Accuracy Data (RA) or Precision Data (RP) Transactions AQ2, or system-generated via AQS Maintain Accuracy Data (L62) or AQS Maintain Precision Data (L61).

4.151.3 Attributes

Type: Character
Length: 20
Required: Yes

4.151.4 Uses

Monitors
Monitor Pollutant Areas
Sample Periods

Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Composite Data
Composite Qualifier Details
Raw Data
Raw Qualifier Details
Precision Data
Accuracy Data
Blanks Data
Comments
NAAQS Averages
Daily Summaries
Quarterly Summaries
Annual Summaries
Summary Maximums
Summary Percentiles
Summary Protocols
Monitor Precision Summaries
Precision Summary Protocols
Monitor Accuracy Summaries
Accuracy Summary Protocols

4.151.5 Value Assignment

The value is a concatenation of *State Code*, *County Code*, *Site ID*, *Parameter*, and *POC,* with each separated by "-".

4.152 Monitor Objective Type

4.152.1 Description

Identification of the reason for measuring air quality by the monitor.

4.152.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction AQ2, or AQS Maintain Monitor (L2).

4.152.3 Attributes

Type: Character
Length: 50
Required: Yes

4.152.4 Uses

Monitor Objectives

4.152.5 Value Assignment

The value must exist on the *Monitor Objective Types* view.

4.153 Monitor Protocol ID

4.153.1 Description

The sequential identification number used to distinguish combinations of sample duration, unit, method, collection frequency, composite type, and alternate method detectable limit (MDL) for a monitor.

4.153.2 Source

User-specified via the Monitor Protocols (MK), Composite Data (RC), Raw Data (RD). Accuracy Data (RA), or Precision Data (RP) Transactions AQ2, or AQS Maintain Monitor (L2).

4.153.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.153.4 Uses

Monitor Protocols
Raw Data
Composite Data
Accuracy Data
Precision Data

4.154 Monitor Protocol ID (Annual)

4.154.1 Description

The ID for one of the protocols used to collect, analyze, and report the monitor's sample data for the year.

4.154.2 Source

System-generated via the Post process.

4.154.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.154.4 Uses

Summary Protocols

4.155 Monitor Protocol ID (Monitor Precision Summary)

4.155.1 Description

The protocols used to collect, analyze, and report the precision checks for the time period.

4.155.2 Source

System-generated via the Precision Data (RP) Transaction AQ2, or AQS Maintain Precision Data (L61).

4.155.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.155.4 Uses

Precision Summary Protocols

4.156 Monitor Protocol ID (Monitor Accuracy Summary)

4.156.1 Description

The protocols used to collect, analyze, and report the audits for the time period.

4.156.2 Source

System-generated via the Accuracy Data (RA) Transaction AQ2, or AQS Maintain Accuracy Data (L62).

4.156.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.156.4 Uses

Accuracy Summary Protocols

4.157 Monitor Type

4.157.1 Description

An administrative classification for the monitor.

4.157.2 Source

User-specified via the Monitor Type Information (MC), or AQS Maintain Monitor (L2).

4.157.3 Attributes

Type: Character
Length: 20
Required: Yes

4.157.4 Uses

Monitor Type Assignments

4.157.5 Value Assignment

The value must exist on the *Monitor Types* view.

4.158 Monitor Type Begin Date

4.158.1 Description

The date on which the monitor type assignment went into effect

4.158.2 Source

User-specified via the Monitor Type Information (MC), or AQS Maintain Monitor (L2).

4.158.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.158.4 Uses

Monitor Type Assignments

4.159 Monitor Type End Date

4.159.1 Description

The date on which a monitor type assignment ends.

4.159.2 Source

User-specified via the Monitor Type Information (MC), or AQS Maintain Monitor (L2).

4.159.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.159.4 Uses

Monitor Type Assignments

4.160 Monthly Required Collection Frequency

4.160.1 Description

Specifies the collection frequency required for the Sample Schedule Month when the Required Collection Frequency Code represents "Stratified Random", "Random", or "Seasonal".

4.160.2 Source

User-specified via the Monitor Sampling Schedule (MF), or AQS Maintain Monitor (L2).

4.160.3 Attributes

Type: Character
Length: 8
Required: Yes

4.160.4 Uses

Sample Schedules

4.160.5 Value Assignment

The value must exist on the *Collection Frequencies* view.

4.161 MSA Represented

4.161.1 Description

The Metropolitan Statistical Area (MSA) from which the concentrations originated, not the location of the monitor.

4.161.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction AQ2, or AQS Maintain Monitor (L2).

4.161.3 Attributes

Type: Character
Length: 8
Required: No

4.161.4 Uses

Monitor Objectives

4.161.5 Value Assignment

Must have a value if neither *CMSA Represented* nor *Urban Area Represented* is valued. Conversely, may not have a value if either *CMSA Represented* or *Urban Area Represented* is valued. If valued, that value must exist on the *MSAs* view.

4.162 NAAQS Date/Time

4.162.1 Description

The date and hour identifying a National Ambient Air Quality Standards (NAAQS) average.

4.162.2 Source

System-generated via the Post process.

4.162.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.162.4 Uses

NAAQS Averages

4.162.5 Value Assignment

4.162.5.1 8-Hour Ozone

The first hour of the 8-hour period.

4.162.5.2 8-Hour Carbon Monoxide

The last hour of the 8-hour period.

4.162.5.3 3-Hour Sulfur Dioxide

The last hour of the 3-hour period.

4.162.5.4 24-Hour Sulfur Dioxide, PM10, & PM2.5

The last hour of the 24-hour period.

4.163 Number of Samples

4.163.1 Description

Indicates the number of samples that were combined to yield the composite sample value.

4.163.2 Source

User-specified via the Composite Data (RC) Transaction AQ2, or AQS Maintain Composite Data (L51).

4.163.3 Attributes

Type: Number
Length: 10.0
Required: Yes

4.163.4 Uses

Composite Data

4.164 Open Path Number

4.164.1 Description

A unique numeric identifier for the individual open path at a site. Each open path represents a different monitor.

4.164.2 Source

User-specified via the Site Open Path Information (AC) Transaction AQ2, or AQS Maintain Site (L1).

4.164.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.164.4 Uses

Open Paths
Monitors

4.165 Parameter

4.165.1 Description

The code assigned to the parameter measured by the monitor. Parameters may be pollutants or non-pollutants.

4.165.2 Source

User-specified

4.165.3 Attributes

Type: Character
Length: 5
Required: Yes

4.165.4 Uses

Monitors
Reporting Organization Precision Summaries
Reporting Organization Accuracy Summaries

4.166 Percent Difference

4.166.1 Description

The measure of variation between the values in a precision check or accuracy audit value pair.

4.166.2 Source

System-generated via the Accuracy Data (RA) or Precision Data (RP) Transactions AQ2, or AQS Maintain Accuracy (L62), or AQS Maintain Precision (L61).

4.166.3 Attributes

Type: Number
Length: Unbounded
Required: Yes

4.166.4 Uses

Precision Data
Accuracy Data

4.166.5 Value Assignment

4.166.5.1 Analytical & Flow

$$d = \frac{(Y - X)}{X} * 100$$

where:

d = percent difference,
Y = indicated concentration or flow rate,
X = actual, or known, concentration or flow rate,

4.166.5.2 Collocated

$$d = \frac{(Y - X)}{\left(\frac{(Y + X)}{2}\right)} * 100$$

where:

d = percent difference,
X = measurement produced by primary sampler (routine monitor), i.e., the Actual Value,
Y = measurement produced by duplicate sampler (monitor used for quality control), i.e., the Indicated Value.

4.166.5.3 Federal Reference Method (FRM) Audit

$$d = \frac{(Y - X)}{X} * 100$$

where:

d = percent difference,
Y = measurement produced from the state-operated sampler, i.e. Indicated Value,
X = measurement produced from the Performance Evaluation Program (PEP) sampler, i.e., Actual Value.

4.167 Percent of Observations (Annual)

4.167.1 Description

The percent of actual data values that were reported compared to the number of data values that could have been reported for the year.

4.167.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction AQ2 or Maintain Annual Summaries (L7).

4.167.3 Attributes

Type: Number
Length: 6.4
Required: No

4.167.4 Uses

Annual Summaries

4.167.5 Value Assignment

The value is always rounded to the integer.

4.167.5.1 1-Hour & 8-Hour Ozone

$$p = \left(v / r \right) * 100$$

where:

p = percentage,
v = *Count of Valid Days*,
r = *Count of Required Days*.

4.167.5.2 Daily & 24-Hour PM2.5 & PM10

$$p = \left(v / m \right) * 100$$

where:

p = percentage,
v = *Count of Valid Days*,
m = number of scheduled days (i.e., *Count of Required Days*).

4.167.5.3 8-Hour Carbon Monoxide, and 3-Hour & 24-Hour Sulfur Dioxide

Not valued.

4.167.5.4 Default Daily

Not valued.

4.167.5.5 Default Hourly

$$p = \left(\frac{n}{\left(a * \frac{24}{l} \right)} \right) * 100$$

where:

p = observation percentage,
n = *Count of Observations (Annual)*,
l = duration length (in hours),
a = number of active days in the year.

4.168 Percent of Observations (Daily)

4.168.1 Description

The percent of actual data values that were reported compared to the number of data values that could have been reported for the 24-hour period.

4.168.2 Source

System-generated via the Post process.

4.168.3 Attributes

Type: Number
Length: 6.4
Required: No

4.168.4 Uses

Daily Summaries

4.168.5 Value Assignment

The value is always rounded to the integer.

$$p = \left(\frac{n}{\left(\frac{24}{l} \right)} \right) * 100$$

where:

p = observation percentage,
n = *Count of Observations (Daily)*,
l = duration length (in hours).

4.169 Percent of Observations (Quarterly)

4.169.1 Description

The percent of actual data values that were reported compared to the number of data values that could have been reported for the quarter.

4.169.2 Source

System-generated via the Post process.

4.169.3 Attributes

Type: Number
Length: 6.4
Required: No

4.169.4 Uses

Quarterly Summaries

4.169.5 Value Assignment

The value is always rounded to the integer.

4.169.5.1 1-Hour & 8-Hour Ozone

$$p = \left(n \Big/ (q * 24) \right) * 100$$

where:

p = observation percentage,
n = number of samples or 8-hour averages in the quarter, regardless of monitoring season, (i.e., *Count of Observations (Quarterly)*),
q = number of active days in the quarter, regardless of monitoring season.

4.169.5.2 24-Hour PM2.5 & PM10

$$p = \left(n \Big/ q \right) * 100$$

where:

p = observation percentage,
n = number of valid 24-hour block averages (i.e., *Number of Observations (Quarterly)*),
q = number of active days in the quarter.

4.169.5.3 Daily PM10

$$p = \left(v / q \right) * 100$$

where:

p = observation percentage,
v = number of valued strata (i.e., *Count of Valid Days*),
r = number of scheduled days (i.e., *Count of Required Days*).

A valid stratum is one where the scheduled day occurs in the quarter and at least one observation occurs in the stratum.

Scheduled days are the number of days within the quarter that were scheduled for sampling, as determined by the EPA-defined calendar for the required collection frequency, and which also fall within the period of operation, as defined by sampling periods.

Seasonal and random frequencies are sub-divided in monthly-required frequencies; otherwise, the required frequency applies to a defined period of time

The reference point for the EPA calendar is January 4, 1956. For example, in the year 2003, the every 6th day calendar would comprise: 1/3/2003, 1/9/2003, 1/15/2003, etc., and the every 3rd day calendar would comprise: 1/3/2003, 1/6/2003, 1/9/2003, 1/12/2003, etc. For a monitor doing seasonal sampling, with every 6th day sampling in April and every 3rd day sampling in May, both months in 2003, the schedule would be as follows: 4/15/03, 4/21/03, 4/27/03, 5/3/03, 5/6/03, 5/9/03, etc.

4.169.5.4 PM2.5

$$p = \left(v / r \right) * 100$$

where:

p = observation percentage,
v = *Count of Valid Days*,
r = number of scheduled days (i.e., *Count of Required Days*).

Valid days are equal to the sum of valued, scheduled sampling days, plus make-ups for missing scheduled days. A make-up day is a sample recorded in the same stratum as, or exactly seven days after, a missing scheduled sample. In both conditions, the make-up sample must occur within the same quarter as the missed sample. A maximum of five make-up samples are allowed per quarter.

Scheduled days are the number of days within the quarter that were scheduled for sampling, as determined by the EPA-defined calendar for the required collection frequency, and which also fall within a period of operation, as defined in sampling periods.

Seasonal and random frequencies are sub-divided in monthly-required frequencies; otherwise, the required frequency applies to a defined period of time. A PM2.5 monitor must have a defined collection frequency for each active day, by rule.

The reference point for the EPA calendar is January 4, 1956. For example, in the year 2003, the every 6th day calendar would comprise: 1/3/2003, 1/9/2003, 1/15/2003, etc., and the every 3rd day calendar would comprise: 1/3/2003, 1/6/2003, 1/9/2003, 1/12/2003, etc. For a monitor doing seasonal sampling, with every 6th day sampling in April and every 3rd day sampling in May, the scheduled days for 2003 would be as follows: 4/15/03, 4/21/03, 4/27/03, 5/3/03, 5/6/03, 5/9/03, etc.

4.169.5.5 Default Hourly

$$p = \left(n / \left(a * 24 / l \right) \right) * 100$$

where:

p = observation percentage,
n = *Count of Observations (Quarterly)*,
l = duration length (in hours),
a = number of active days in the quarter.

4.169.5.6 Default Daily

Not valued.

4.170 Percentile

4.170.1 Description

An EPA-assigned percentile level for which a *Percentile Value* is determined.

4.170.2 Source

System-generated via the Post Process, or user-specified via the Annual Summary (RS) Transaction AQ2 or AQS Maintain Annual Summary (L7).

4.170.3 Attributes

Type: Number
Length: 3
Required: Yes

4.170.4 Uses

Summary Percentiles

4.170.5 Value Assignment

The possible values are: 10, 25, 50, 75, 90, 95, 98, and 99.

4.171 Percentile Value

4.171.1 Description

The value for the year where there are *k* values less than or equal to it, where *k* is the calculated rank for the *Percentile*.

4.171.2 Source

System-generated via the Post Process, or user-specified via the Annual Summary (RS) Transaction AQ2 or AQS Maintain Annual Summary (L7).

4.171.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.171.4 Uses

Summary Percentiles

4.171.5 Value Assignment

4.171.5.1 Ozone 1-Hour & 8-Hour

The 1-hour or 8-hour *Maximum Value (Daily)* where there are *k Maximum Value (Daily)* values less than or equal to it, where *k* is the calculated rank for the *Percentile*. The formula for determining the rank is:

$$k = CEILING\left(v * \left({}^{p}/_{100} \right) \right)$$

where:

k = percentile rank
p = *Percentile*,
v = *Count of Valid Days*.

Note: A CEILING function returns the smallest integer higher than, or equal to, the given number.

4.171.5.2 Daily Non-Seasonal PM2.5

The sample value where there are k values less than or equal to it, where k is the calculated rank for the percentile. The formula for determining the rank is:

$$k = CEILING\left(\sum_{q=1}^{4} MINIMUM\left(r_q, n_q\right) * \left(p/100\right)\right) + n - \left(\sum_{q=1}^{4} MINIMUM\left(r_q, n_q\right)\right)$$

where:

k = percentile rank
r_q = number of required samples for the quarter,
n_q = number of actual samples for the quarter,
q = quarter,
p = *Percentile*,
n = *Count of Observations (Annual)*.

Note: A CEILING function returns the smallest integer higher than, or equal to, the given number. A MINIMUM function returns the least of a series of numbers.

4.171.5.3 Daily Seasonal PM2.5

The minimum sample value that makes:

$$W(x) > \left({}^{p}/_{100} \right)$$

where:

$$W(x) = \left(\left({}^{d_h}/_{d_h + d_l} \right) * F_h(x) \right) + \left(\left({}^{d_l}/_{d_h + d_l} \right) * F_l(x) \right)$$

where:

d_h = number of calendar days in the high season,
d_l = number of calendar days in the low season,
p = *Percentile*,
x = the measured concentration, and

$$F_a(x) = {}^{l_a}/_{n_a}$$

where:

a = high or low,
l_a = number of samples in season a that are <= x,
n_a = number of samples in season a.

The high season are those months where the monthly required frequency is that with minimum daily interval for the year; the low season is all others months.

(Reference: EPA-454/R-99-008 Guideline on Data Handling Conventions for the PM NAAQS)

4.171.5.4 Hourly and Non-PM2.5 Daily

The sample value where there are *k* sample values less than or equal to it, where *k* is the calculated rank for the percentile. The formula for calculating the rank is:

$$k = CEILING\left(n * \left(p / 100 \right) \right)$$

where:

k = percentile rank
p = *Percentile*,
n = *Count of Observations (Annual)*.

Note: A CEILING function returns the smallest integer higher than, or equal to, the given number.

4.171.5.5 Non-Ozone National Ambient Air Quality Standards (NAAQS)

The valid 8-hour average where there are *k* valid 8-hour averages less than or equal to it, where *k* is the calculated rank for the percentile. The formula for calculating the rank is:

$$k = CEILING\left(n * \left(p / 100 \right) \right)$$

where:

k = percentile rank
p = *Percentile*,
n = *Count of Observations (Annual)*.

Note: A CEILING function returns the smallest integer higher than, or equal to, the given number.

4.172 POC

4.172.1 Description

Pollutant Occurrence Code. An identifier used to distinguish between multiple monitors at the same site that are measuring the same parameter. For example, the first monitor established to measure carbon monoxide (CO) at a site could have a *POC* of 1. If an additional monitor were established at the same site to measure CO, that monitor could have a *POC* of 2. However, if a new instrument were installed to replace the original instrument used as the first monitor, that would be the same monitor and it would still have a *POC* of 1.

For criteria pollutants, data from different sampling methods should only be stored under the same *POC* if the sampling intervals are the same and the methods are reference or equivalent. For sites where duplicate sampling is being conducted by multiple agencies or by one agency with multiple samplers, multiple *POCs* must be utilized to store all samples.

For non-criteria pollutants, data from multiple sampling methods can be stored under the same *POC* if the sampling intervals are the same and there is only one sample for the time reported. If multiple open path monitors are reporting data for the same parameter, each open path would be assigned a different *POC*.

4.172.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.172.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.172.4 Uses

Monitors

4.173 Pollutant Area Code

4.173.1 Description

Designation of a pollutant area to which the monitor is assigned. Pollutant areas are geographic areas defined by a program office in which a certain pollutant should be closely watched. Most are problem or non-attainment areas, but attainment areas requiring special attention may also be defined. Types of pollutant areas are: status areas, monitoring areas, and monitor planning areas.

4.173.2 Source

User-specified, via the Monitor Basic (MA) Transaction (AQ2), or Maintain Monitor (L2).

4.173.3 Attributes

Type: Character
Length: 5
Required: Yes

4.173.4 Uses

Monitor Pollutant Areas

4.173.5 Value Assignment

The value must exist on the *Pollutant Areas* view, and the corresponding type must be valid for the *Parameter*.

4.174 Pollutant Area Type

4.174.1 Description

Types of pollutant areas, such as status area, monitoring area, monitor-planning area.

4.174.2 Source

System-generated, via the Monitor Basic (MA) Transaction (AQ2), or Maintain Monitor (L2).

4.174.3 Attributes

Type: Character
Length: 40
Required: Yes

4.174.4 Uses

Monitor Pollutant Areas

4.174.5 Value Assignment

The value must exist on the *Pollutant Area Types* view.

4.175 Precision Class

4.175.1 Description

Description of the class of precision check taken at the monitor.

4.175.2 Source

System-generated, via the Precision Data (RP) Transaction (AQ2), or Maintain Precision Data (L61).

4.175.3 Attributes

Type: Character
Length: 20
Required: Yes

4.175.4 Uses

Precision Data
Monitor Precision Summaries
Precision Summary Protocols
Reporting Organization Precision Summaries

4.175.5 Value Assignment

4.175.5.1 Precision Data

1. If the method is automated (continuous), and the unit is not a flow unit, and the reported duration is not 24-hour block average, then the class is "Analytical". This class will generally include gaseous criteria pollutants, such as ozone (O3), carbon monoxide (CO), sulfur dioxide (SO2), and nitrogen dioxide (NO2), that were recorded using automated methods.
2. If the method is either automated or manual (intermittent), and the unit is a flow unit, then the class is "Flow". This category will generally include particulate criteria pollutants, such as lead (Pb), PM2.5 and PM10, that were recorded using automated methods.
3. If the method is manual and the unit is not a flow unit, or the method is automated, the unit is not a flow unit, and the duration is a 24-hour block average, then the class is "Collocated". This category will include particulate criteria pollutants such as PM2.5 (both manual and automated) and PM10 (manual only).

4.175.5.2 Monitor & Reporting Organization Precision Summaries

The *Precision Class* specified for the precision checks that are being aggregated in the summary.

4.176 Precision Date

4.176.1 Description

The calendar date for which the precision check is being reported.

4.176.2 Source

User-specified, via the Precision Data (RP) Transaction (AQ2), or Maintain Precision Data (L61).

4.176.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.176.4 Uses

Precision Data

4.177 Precision ID

4.177.1 Description

A sequentially assigned number used to identify a particular precision check from others, when multiple checks are performed on the same day.

4.177.2 Source

User-specified, via the Precision Data (RP) Transaction (AQ2), or Maintain Precision Data (L61).

4.177.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.177.4 Uses

Precision Data

4.178 Precision Scale

4.178.1 Description

Indicates the number of places to the right of the decimal point provided by the data owner at submission, including trailing zeros.

4.178.2 Source

System-generated, via the Precision Data (RP) Transaction (AQ2), or Maintain Precision Data (L61).

4.178.3 Attributes

Type: Number
Length: 1.0
Required: Yes

4.178.4 Uses

Precision Data

4.179 Precision Sample ID

4.179.1 Description

The unique identity (ID) number of the reference sample used to challenge the instrument.

4.179.2 Source

User-specified, via the Precision Data (RP) Transaction (AQ2), or Maintain Precision Data (L61).

4.179.3 Attributes

Type: Character
Length: 10
Required: No

4.179.4 Uses

Precision Data

4.180 Primary Sampler Indicator

4.180.1 Description

Indicates whether the monitor is the primary or duplicate monitor in a collocated monitor pair.

4.180.2 Source

User-specified, via the Monitor Collocation Period (MJ) Transaction (AQ2), or Maintain Monitor (L2).

4.180.3 Attributes

Type: Character
Length: 1
Required: Yes

4.180.4 Uses

Monitor Collocation Periods

4.180.5 Value Assignment

The value must be "Y", which indicates the monitor is the primary sampler, or "N", which indicates that it is the duplicate sampler.

4.181 Primary Sampler Monitor ID

4.181.1 Description

The monitor ID of the duplicate sampler's primary sampler in the collocated pair.

4.181.2 Source

System-generated, via the Monitor Collocation Period (MJ) Transaction (AQ2), or Maintain Monitor (L2).

4.181.3 Attributes

Type: Character
Length: 20
Required: No

4.181.4 Uses

Monitor Collocation Periods

4.181.5 Value Assignment

Must be valued when *Primary Sampler Indicator* is "N"; may not be valued when it is "Y".

4.182 Primary Qualifier Code

4.182.1 Description

The primary qualifier for a raw or composite sample.

4.182.2 Source

System-generated, via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.182.3 Attributes

Type: Character
Length: 8
Required: No

4.182.4 Uses

Raw Data
Composite Data

4.182.5 Value Assignment

4.182.5.1 Raw Data

Replicated from the *Raw Qualifier Details* for the *Raw Data* record, according to the following hierarchy:

1. Null Data codes,
2. Exceptional Event codes,
3. Natural Event codes,
4. the code for "Validated Value",
5. any other qualifier code.

4.182.5.2 Composite Data

Replicated from the *Composite Qualifier Details* for the *Composite Data* record, according to the following hierarchy:

1. Exceptional Event codes,
2. Natural Event codes,
3. the code for "Validated Value",
4. any other qualifier code.

4.183 Primary Qualifier Type

4.183.1 Description

The qualifier type of the *Primary Qualifier Code*.

4.183.2 Source

System-generated, via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.183.3 Attributes

Type: Character
Length: 8
Required: No

4.183.4 Uses

Raw Data
Composite Data

4.184 Probe Height

4.184.1 Description

The height of the sampling probe from the ground in meters.

4.184.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.184.3 Attributes

Type: Number
Length: 8.2
Required: No

4.184.4 Uses

Monitors

4.185 Probe Horizontal Distance

4.185.1 Description

The horizontal distance, in meters, of the probe from its supports.

4.185.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.185.3 Attributes

Type: Number
Length: 8.2
Required: No

4.185.4 Uses

Monitors

4.186 Probe Vertical Distance

4.186.1 Description

The vertical distance, in meters, of the probe from its supports.

4.186.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.186.3 Attributes

Type: Number
Length: 8.2
Required: No

4.186.4 Uses

Monitors

4.187 Probe Location

4.187.1 Description

The location of the sampling probe.

4.187.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.187.3 Attributes

Type: Character
Length: 20
Required: No

4.187.4 Uses

Monitors

4.187.5 Value Assignment

The value must exist on the *Probe Locations* view.

4.188 Probe Obstruction Height

4.188.1 Description

The height, in meters, of the top of the obstruction above the probe.

4.188.2 Source

User-specified via the Monitor Obstruction Information (MH) Transaction AQ2, or AQS Maintain Monitor (L2).

4.188.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.188.4 Uses

Probe Obstructions

4.189 Probe Obstruction Type

4.189.1 Description

The type of obstruction responsible for the restricted airflow of a monitor.

4.189.2 Source

User-specified via the Monitor Obstruction Information (MH) Transaction AQ2, or AQS Maintain Monitor (L2).

4.189.3 Attributes

Type: Character
Length: 20
Required: Yes

4.189.4 Uses

Probe Obstructions

4.189.5 Value Assignment

The value must exist on the *Probe Obstruction Types* view.

4.190 Project Class

4.190.1 Description

The code for the type of sampling performed by the monitor.

4.190.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.190.3 Attributes

Type: Character
Length: 8
Required: No

4.190.4 Uses

Monitors

4.190.5 Value Assignment

The value must exist on the *Project Types* view.

4.191 Qualifier Code

4.191.1 Description

Qualifications used to describe the sample data point. They may document exceptional data or quality assurance exceptions.

4.191.2 Source

User-specified, via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.191.3 Attributes

Type: Character
Length: 8
Required: Yes

4.191.4 Uses

Raw Qualifier Details
Composite Qualifier Details

4.191.5 Value Assignment

The value must exist on the *Qualifiers* view.

4.192 Quarter Represented

4.192.1 Description

The quarter represented by the audit.

4.192.2 Source

User-specified or system-generated, via the Accuracy Data (RA) Transaction (AQ2), or Maintain Accuracy Data (L62).

4.192.3 Attributes

Type: Number
Length: 1.0
Required: Yes

4.192.4 Uses

Accuracy Data

4.192.5 Value Assignment

4.192.5.1 Lead

User-specified, via the Accuracy Data (RA) Transaction (AQ2), or AQS Maintain Accuracy Data (L62).

4.192.5.2 Default

Derived from the record's *Accuracy Date* value.

4.193 Recording Mode

4.193.1 Description

A term that describes how the methods recorded the source samples.

4.193.2 Source

System-generated, via the Accuracy Data (RA) or Precision Data (RP) Transactions AQ2, or AQS Maintain Precision Data (L61) or Maintain Accuracy Data (L62).

4.193.3 Attributes

Type: Character
Length: 30
Required: Yes

4.193.4 Uses

Monitor Precision Summaries
Reporting Organization Precision Summaries
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.193.5 Value Assignment

The possible values are: CONTINUOUS (i.e., Automated), and INTERMITTENT (i.e., Manual). The value is derived from the applicable methodology records.

4.194 Reference Point

4.194.1 Description

A term that describes the place for which locational coordinates were determined.

This data element is required by EPA Locational Data Policy. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.194.2 Source

System-generated via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.194.3 Attributes

Type: Character
Length: 50
Required: Yes

4.194.4 Uses

Sites

4.194.5 Value Assignment

Always "MONITORING POINT".

4.195 Regulation Code

4.195.1 Description

A code, which represents an EPA regulation for which compliance documentation is required.

4.195.2 Source

User-specified via the Monitor Regulation Compliance (MI) Transaction AQ2, or AQS Maintain Monitor (L2).

4.195.3 Attributes

Type: Character
Length: 8
Required: Yes

4.195.4 Uses

Monitor Regulatory Compliances

4.195.5 Value Assignment

Code	Description
RM	Reference Method Used
SC	Siting Criteria Met
QC	Quality Assurance Criteria Met
FC	First PM10 Exceedance Correction
ST	Short Term Satisfied

4.196 Reported Unit

4.196.1 Description

The dimensional system in which a pollutant concentration or parameter reading is expressed.

4.196.2 Source

User-specified via the Monitor Protocol (MK), Raw Data (RD), or Composite Data (RC) Transactions AQ2, or AQS Maintain Monitor (L2).

4.196.3 Attributes

Type: Character
Length: 3
Required: Yes

4.196.4 Uses

Monitor Protocols

4.196.5 Value Assignment

The value must exist on the *Units* view.

4.197 Reported Sample Value

4.197.1 Description

The value of an observation being reported.

4.197.2 Source

User-specified via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.197.3 Attributes

Type: Number
Length: 5.5
Required: No

4.197.4 Uses

Raw Data
Composite Data

4.198 Reported Scale

4.198.1 Description

Indicates the number of places to the right of the decimal point provided by the data owner at submission, including trailing zeros.

4.198.2 Source

System-generated via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.198.3 Attributes

Type: Number
Length: 1.0
Required: No

4.198.4 Uses

Raw Data
Composite Data

4.199 Reporting Organization

4.199.1 Description

A code that identifies the agency that generated the source precision or accuracy data for the summary.

4.199.2 Source

System-generated, via the Accuracy Data (RA) or Precision Data (RP) Transactions AQ2, or AQS Maintain Precision Data (L61) or Maintain Accuracy Data (L62).

4.199.3 Attributes

Type: Character
Length: 8
Required: Yes

4.199.4 Uses

Monitor Precision Summaries
Precision Summary Protocols
Reporting Organization Precision Summaries
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.200 Required Collection Frequency Begin Date

4.200.1 Description

The date on which the Required Collection Frequency (RCF) went into effect.

4.200.2 Source

User-specified via the Monitor Sampling Schedule (MF) Transaction AQ2, or AQS Maintain Monitor (L2).

4.200.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.200.4 Uses

Required Collection Frequencies
Sample Schedules

4.201 Required Collection Frequency Code

4.201.1 Description

The Required Collection Frequency (RCF), required by either Photochemical Assessment Monitoring System (PAMS) regulations for organic compounds: PM-2.5 or PM-10 monitors.

4.201.2 Source

User-specified via the Monitor Sampling Schedule (MF) Transaction AQ2, or AQS Maintain Monitor (L2).

4.201.3 Attributes

Type: Character
Length: 8
Required: Yes

4.201.4 Uses

Required Collection Frequencies

4.201.5 Value Assignment

The value must exist on the *Collection Frequencies* view.

4.202 Required Collection Frequency End Date

4.202.1 Description

The date on which the Required Collection Frequency (RCF) ended.

4.202.2 Source

User-specified via the Monitor Sampling Schedule (MF) Transaction AQ2, or AQS Maintain Monitor (L2).

4.202.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.202.4 Uses

Required Collection Frequencies

4.203 Sample Date/Time

4.203.1 Description

The date and time for which the observation is being reported.

4.203.2 Source

User-specified via the Raw Data (RD) Transaction AQ2, or AQS Maintain Raw Data (L54).

4.203.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.203.4 Uses

Raw Data
Raw Qualifier Details

4.204 Sample Residence Time

4.204.1 Description

The time in seconds for the sample to move from the probe inlet to the monitor.

4.204.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.204.3 Attributes

Type: Number
Length: 8.2
Required: No

4.204.4 Uses

Monitors

4.205 Sample Schedule Month

4.205.1 Description

The month number for which a Monthly Required Collection Frequency applies.

4.205.2 Source

System-generated via the Monitor Sampling Schedule (MF) Transaction AQ2, or AQS Maintain Monitor (L2).

4.205.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.205.4 Uses

Sample Schedules

4.205.5 Value Assignment

Number	Month
1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

4.206 Schedule Exemption Indicator

4.206.1 Description

Indicates whether the sampling schedule differs from that required by the standard, by approval of the Regional Administrator.

4.206.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.206.3 Attributes

Type: Character
Length: 1
Required: No

4.206.4 Uses

Monitor Pollutant Areas

4.206.5 Value Assignment

4.206.5.1 Monitor Planning Areas

The field may be "Y" and "N" for Monitor Planning Areas.

4.206.5.2 Default

Not valued.

4.207 Screening Group Number

4.207.1 Description

The number for the screening group that created the monitor, i.e., its owner.

4.207.2 Source

System-generated via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.207.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.207.4 Uses

Monitors

4.207.5 Value Assignment

The value must exist on the *Screening Groups* view.

4.208 Sequence Number

4.208.1 Description

The sequential identification number used to distinguish Comment Texts for a specific monitor, site, or qualifier detail.

4.208.2 Source

User-specified via AQS Maintain Site (L1), Maintain Monitor (L2), Maintain Raw Data (L54), or Maintain Composite Data (L51).

4.208.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.208.4 Uses

Comments

4.209 Session Screening Group

4.209.1 Description

The number of the AQS session screening group under which the sample point was submitted.

4.209.2 Source

System-generated via Raw Data (RD) or Composite Data (RC) Transactions AQ2, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.209.3 Attributes

Type: Number
Length: 12.0
Required: No

4.209.4 Uses

Raw Data
Composite Data

4.209.5 Value Assignment

4.209.5.1 Pre-Production Status

May be valued when the *Status Indicator* is "R" or "S". The value must exist on the *Screening Groups* view.

4.209.5.2 Production Status

May not be valued when the *Status Indicator* is "P".

4.210 Session User ID

4.210.1 Description

The user of the AQS session under which the sample point was submitted.

4.210.2 Source

System-generated via Raw Data (RD) or Composite Data (RC) Transactions AQ2, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.210.3 Attributes

Type: Character
Length: 40
Required: No

4.210.4 Uses

Raw Data
Composite Data

4.210.5 Value Assignment

4.210.5.1 Pre-Production Status

May be valued when the *Status Indicator* is "R" or "S". The value must exist on the *Airs User Profiles* view.

4.210.5.2 Production Status

May not be valued when the *Status Indicator* is "P".

4.211 Session Date

4.211.1 Description

The date and time of the AQS session under which the sample point was submitted.

4.211.2 Source

System-generated via Raw Data (RD) or Composite Data (RC) Transactions AQ2, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.211.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.211.4 Uses

Raw Data
Composite Data

4.211.5 Value Assignment

4.211.5.1 Pre-Production Status

May be valued when the *Status Indicator* is "R" or "S".

4.211.5.2 Production Status

May not be valued when the *Status Indicator* is "P".

4.212 Site ID

4.212.1 Description

A numeric identifier (ID) that uniquely identifies each air monitoring site within a county. There is no requirement that *Site IDs* be assigned continuously or in any particular order. Local organizations are thus free to allocate *Site IDs* in any way they choose, as long as there is no duplication within a county.

A specific *Site ID* is associated with a specific physical location and address. Any change in address requires a new *Site ID* to be assigned. This address change could include a change from the roof of one building to another. A change in location on the same roof should not normally require a new *Site ID*. Although an address change would routinely mean a new *Site ID*, some changes that do not change the site's location in respect to surrounding sources and its measurement scale would require no change. An EPA regional office should be consulted for assistance in determining whether a new site ID is required.

If a new *Site ID* is needed for a site not operated by the air pollution control agency, that agency should be contacted to assist in the ID assignment, to ensure that the ID is unique within the county. In other words, when a new *Site ID* is assigned, it must be different from any other *Site ID* already existing for that combination of *State Code* and *County Code*.

4.212.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.212.3 Attributes

Type: Character
Length: 4
Required: Yes

4.212.4 Uses

Sites

4.213 Source of Traffic Count

4.213.1 Description

The method by which the traffic volume/flow count was obtained.

4.213.2 Source

User-specified via the Site Street Information (AB) Transaction AQ2, or AQS Maintain Site (L1).

4.213.3 Attributes

Type: Character
Length: 50
Required: No

4.213.4 Uses

Tangent Roads

4.213.5 Value Assignment

The value must exist on the *Traffic Volume Sources* view.

4.214 Source Scale

4.214.1 Description

Identifies the ratio of the map or cartographic product to the true location. The data element for scale should be the X value of the 1:X ratio (e.g., if the scale is 1:24,000, the value of the scale data element should be 24,000). The United States Geological Survey 1:24,000 is usually the smallest reasonable scale for locating sub-facility points, such as stacks or pipes. The relative accuracies of maps as a locational tool decreases as the X value increases.

This data element is required by EPA Locational Data Policy. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.214.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.214.3 Attributes

Type: Number
Length: 12.0
Required: No

4.214.4 Uses

Sites

4.214.5 Value Assignment

This field is required when the *Horizontal Collection Method* is based upon using a map.

4.215 Spatial Average Indicator

4.215.1 Description

Indicates whether spatial averaging is to be performed for the all-individual annual weighted means for sites that are flagged and in the same community-monitoring zone.

4.215.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.215.3 Attributes

Type: Character
Length: 1
Required: No

4.215.4 Uses

Monitor Pollutant Areas

4.215.5 Value Assignment

4.215.5.1 Monitor Pollutant Areas

The field may be "Y" and "N" for Monitor Planning Areas.

4.215.5.2 Default

Not valued.

4.216 Standard Deviation (Monitor Precision Summary)

4.216.1 Description

The measure of the dispersion about the central tendency of a pollutant that is the square root of the precision mean of the squares of the variation of each Relative Percent Differences of a value pair from the precision mean of the Relative Percent Differences of the value pairs for the time period.

4.216.2 Source

System-generated, via the Precision Data (RP) Transaction AQ2, or AQS Maintain Precision Data (L61).

4.216.3 Attributes

Type: Number
Length: 6.4
Required: Yes

4.216.4 Uses

Monitor Precision Summaries

4.216.5 Value Assignment

4.216.5.1 Analytical & Flow

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a analytical or flow precision check,
n = number of gaseous or flow checks (i.e., *Count of Checks (Monitor Precision Summary)*),

and $n > 1$.

If $n = 1$, then the standard deviation is assigned to be 0.

4.216.5.2 Collocated (PM2.5)

Standard deviation is not computed for collocated PM2.5.

4.216.5.3 Collocated (Other)

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a valid collocated pair,
n = *Count of Valid Collocated Data Pairs (Monitor Precision Summary)*,

and $n > 1$.

If $n = 1$, then the standard deviation is assigned to be 0.

4.217 Standard Deviation (Reporting Organization Precision Summary)

4.217.1 Description

The measure of the dispersion about the central tendency of a pollutant that is the square root of the precision mean of the squares of the variation of each Relative Percent Differences of a value pair from the precision mean of the Relative Percent Differences of the value pairs for the time period.

4.217.2 Source

System-generated, via the Precision Data (RP) Transaction AQ2, or AQS Maintain Precision Data (L61).

4.217.3 Attributes

Type: Number
Length: 6.4
Required: No

4.217.4 Uses

Reporting Organization Precision Summaries

4.217.5 Value Assignment

4.217.5.1 Analytical & Flow

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a analytical or flow precision check,
n = number of gaseous or flow checks (i.e., *Count of Checks (Reporting Organization Precision Summary)*),

and $n > 1$.

If $n = 1$, then the standard deviation is assigned to be 0.

4.217.5.2 Collocated (PM2.5)

Standard deviation is not computed for collocated PM2.5.

4.217.5.3 Collocated (Other)

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a valid collocated pair,
n = *Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)*,

and $n > 1$.

If $n = 1$, then the standard deviation is assigned to be 0.

4.217.5.4 Federal Reference Method (FRM) Audit

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of an FRM audit pair (2.1.3 Percent Difference),
n = number of FRM audits (i.e., *Count of Checks (Reporting Organization Precision Summary)*),

and $n > 1$.

If $n = 1$, then the standard deviation is assigned to be 0.

4.218 Standard Deviation (Reporting Organization Accuracy Summary)

4.218.1 Description

The measure of the dispersion about the central tendency of a pollutant that is the square root of the precision mean of the squares of the variation of each Relative Percent Differences of a value pair from the precision mean of the Relative Percent Differences of the value pairs for the time period.

4.218.2 Source

System-generated, via the Accuracy Data (RA) Transaction AQ2, or Maintain Accuracy Data (L62).

4.218.3 Attributes

Type: Number
Length: 7.5
Required: No

4.218.4 Uses

Reporting Organization Accuracy Summaries

4.218.5 Value Assignment

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a analytical or flow audit,
n = *Count of Audits (Reporting Organization Accuracy Summary)*.

If either quarter in either half of the year has an *Count of Audits (Reporting Organization Accuracy Summary)* of 1, then the source data for both quarters in that half will be merged for purposes of calculating the standard deviation, and reported with the second quarter of the half (i.e., Q2 or Q4). In this case, there will be no value for the corresponding first quarter in the half (i.e., Q1 or Q3).

4.219 Standard Scale

4.219.1 Description

Indicates the number of places to the right of the decimal point for the Standard Sample Value, including trailing zeros.

4.219.2 Source

System-generated via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.219.3 Attributes

Type: Number
Length: 1.0
Required: No

4.219.4 Uses

Raw Data
Composite Data

4.219.5 Value Assignment

Replicated from the *Summary Scale* for the *Parameter* and *Method Code* on the *Sampling Methodologies* view.

4.220 Standard Sample Value

4.220.1 Description

The *Reported Sample Value* converted to a value in the *Standard Unit* for the *Parameter*.

4.220.2 Source

System-generated via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.220.3 Attributes

Type: Number
Length: 5.5
Required: No

4.220.4 Uses

Raw Data
Composite Data

4.220.5 Value Assignment

Each *Reported Unit-Standard Unit* combination has a record in the *Unit Conversions* view. That record specifies the values to be used in the following formula:

$$v = s + (l * r * m^i * c^j)$$

where:

v = the value in standard units (*Standard Sample Value*),
s = the scalar factor,
l = the linear factor,
r = the sample value in reported units (*Reported Sample Value*),
m = the molecular weight of the *Parameter*,
i = indication of whether molecular weight applies, (0 means "No", 1 means "Yes"),
c = the carbon count of the *Parameter*,
j = indication of whether carbon count applies, (0 means "No", 1 means "Yes").

When the calculated *Standard Sample Value* is less than the applicable method detectable limit (MDL), (and where the *Parameter* is not 88101), the calculated value is superceded by a value equal to ½ the applicable MDL. When such a substitution occurs, the *Half MDL Substitution Indicator* is set to "Y".

For any sample, the applicable MDL generally is that which is assigned to the method by the EPA. This EPA-assigned, i.e., federal, MDL, may be superceded by an *Alternative MDL*. An *Alternate MDL* is specified by the submitting agency as part of a raw data transaction. This *Alternative MDL* is stored with the corresponding *Monitor Protocol*, and is converted to the

Standard Unit, using the above formula, for comparison to the calculated *Standard Sample Value*.

A *Standard Sample Value* that is either greater than, or equal to, the applicable MDL, or for ozone (44201), regardless of relation to the applicable MDL, is subject to rescaling. The scaling factor is assigned to the method by the EPA, i.e., *Standard Scale*. Rescaling is either rounding or truncation of the *Standard Sample Value* to the number of decimal places specified in the *Standard Scale*. Each record in the *Parameters* view has a *Conversion Indicator* field, which specifies whether truncation or rounding applies. (Rounding is the default.)

4.221 Standard Unit

4.221.1 Description

The *Standard Unit* for the *Parameter*.

4.221.2 Source

System-generated via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.221.3 Attributes

Type: Character
Length: 3
Required: No

4.221.4 Uses

Raw Data
Composite Data

4.221.5 Value Assignment

Replicated from the *Standard Unit* for the *Parameter* on the *Parameters* view.

4.222 State Code

4.222.1 Description

A Federal Information Processing Standards (FIPS) code that identifies one of the 50 states, U. S. territories, Washington, DC, or foreign countries.

4.222.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.222.3 Attributes

Type: Character
Length: 2
Required: Yes

4.222.4 Uses

Sites

4.222.5 Value Assignment

The value must exist on the *States* view.

4.223 State or Local Site ID

4.223.1 Description

Identification code used by a state or local agency, if different from the AQS site ID.

4.223.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.223.3 Attributes

Type: Character
Length: 40
Required: No

4.223.4 Uses

Sites

4.224 Status Indicator

4.224.1 Description

An indication of the status of the record.

4.224.2 Source

System-generated by AQS Load, Stat/CR, Post, Maintain Site (L1), Maintain Monitor (L2), Maintain Raw Data (L54), and Maintain Composite Data (L51).

4.224.3 Attributes

Type: Character
Length: 1
Required: Yes

4.224.4 Uses

Sites
Tangent Roads
Open Paths
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Raw Data
Composite Data

4.224.5 Value Assignment

Indicator	Description
F	Validated to field-level
R	Relationally complete (Raw & Composite Data Only)
S	Statistically checked (Raw & Composite Data Only)
P	Production
I	Inactive (Raw & Composite Data Only)

4.225 Street Address

4.225.1 Description

Specifies the building/street location of the monitoring site.

4.225.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.225.3 Attributes

Type: Character
Length: 2000
Required: Yes

4.225.4 Uses

Sites

4.226 Street Name

4.226.1 Description

The name of a street near to the monitoring site.

4.226.2 Source

User-specified via the Site Street Information (AB) Transaction AQ2, or AQS Maintain Site (L1).

4.226.3 Attributes

Type: Character
Length: 50
Required: Yes

4.226.4 Uses

Tangent Roads

4.227 Summary Criteria Indicator (Annual)

4.227.1 Description

An indication of whether minimum summary criteria have been by the monitor for the year.

4.227.2 Source

System-generated via the Post process.

4.227.3 Attributes

Type: Character
Length: 3
Required: No

4.227.4 Uses

Annual Summaries

4.227.5 Value Assignment

The possible values are "Y" and "N".

4.227.5.1 8-Hour Ozone

Minimum summary criteria are met when the percentage derived from the following formula, rounded to an integer, is greater than, or equal to, 75%:

$$p = \left({(v + a)}/{r} \right) * 100$$

where:

p = percentage,
v = *Count of Valid Days*,
a = *Count of Missing Days Assumed Less Than Standard*,
r = *Count of Required Days*.

4.227.5.2 8-Hour Carbon Monoxide, 3-Hour and 24-Hour Sulfur Dioxide

Minimum summary criteria are met where the annual Count of Observations is greater than 0.

4.227.5.3 Default Hourly

Minimum summary criteria are met when the *Percent of Observations (Annual)* is greater than, or equal to, 75%.

4.227.5.4 Default Daily & 24-Hour PM10 & PM2.5

For daily, 24-Hour PM10, 24-Hour PM2.5, weekly, monthly, composite weekly, and composite monthly data, annual minimum summary criteria are met when each of the four quarters in the year have met quarterly minimum summary criteria, i.e. the *Summary Criteria Indicator (Quarterly)* values are "Y".

For quarterly, composite quarterly, and composite seasonal data, minimum summary criteria are met when the *Count of Observations (Annual)* is greater than, or equal to, 3.

4.228 Summary Criteria Indicator (Daily)

4.228.1 Description

An indication of whether minimum summary criteria have been by the monitor for the day.

4.228.2 Source

System-generated via the Post process.

4.228.3 Attributes

Type: Character
Length: 3
Required: No

4.228.4 Uses

Daily Summaries

4.228.5 Value Assignment

4.228.5.1 1-Hour Ozone

Minimum summary criteria are met when there were either at least nine samples from 9:01 AM Local Standard Time (LST) to 9:00 PM LST, (i.e., at least 75% of possible hourly samples were measured), or at least one exceedance.

4.228.5.2 8-Hour Ozone

Minimum summary criteria are met where either of the following conditions exists:

- there are at least 18 valid 8-hour averages (i.e., *Count of Observations (Daily)*) for the 24-hour period,
- the *Maximum Value (Daily)* is greater than the standard (i.e., *Count of Primary Exceedances (Daily)* >= 1).

4.228.5.3 1-Hour PM10 & PM2.5

Minimum summary criteria are met when the *Percent of Observations (Daily)* is greater than, or equal to, 75%.

4.228.5.4 Default

Not valued.

4.229 Summary Criteria Indicator (Quarterly)

4.229.1 Description

An indication of whether minimum summary criteria have been by the monitor for the quarter.

4.229.2 Source

System-generated via the Post process.

4.229.3 Attributes

Type: Character
Length: 3
Required: No

4.229.4 Uses

Quarterly Summaries

4.229.5 Value Assignment

4.229.5.1 Daily & 24-Hour PM10 & PM2.5

Minimum summary criteria are met when the *Percent of Observations (Quarterly)* is greater than, or equal to, 75%.

4.229.5.2 Default Hourly

Minimum summary criteria are met when the *Percent of Observations (Quarterly)* is greater than, or equal to, 75%.

4.229.5.3 Default Daily

Minimum summary criteria are met for the quarter when the *Count of Observations (Quarterly*) is greater than, or equal to, a duration-specific threshold. Those thresholds are:

Duration	Threshold
Daily	12
Weekly; Composite Weekly	9
Monthly; Composite Monthly	2
Quarterly; Composite Quarterly; Composite Seasonal	1

4.230 Summary Quarter

4.230.1 Description

The quarter number (1-4) identifying a quarterly summary.

4.230.2 Source

System-generated via the Post process.

4.230.3 Attributes

Type: Number
Length: 1.0
Required: Yes

4.230.4 Uses

Quarterly Summaries

4.231 Summary Year

4.231.1 Description

The year identifying a summary.

4.231.2 Source

System-generated via the Post process, the Accuracy Data (RA) or Precision Data (RP) Transactions AQ2, or AQS Maintain Accuracy Data (L62) or Maintain Precision Data (L61).

4.231.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.231.4 Uses

Annual Summaries
Quarterly Summaries
Monitor Precision Summaries
Precision Summary Protocols
Reporting Organization Precision Summaries
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.232 Supporting Agency

4.232.1 Description

Identifies the agency responsible for the operation of the monitoring site.

4.232.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.232.3 Attributes

Type: Character
Length: 8
Required: No

4.232.4 Uses

Sites

4.232.5 Value Assignment

The value must exist on the *Agencies* view, and, in combination with *State Code*, on the *State Agencies* view.

4.233 Surrogate Indicator

4.233.1 Description

Indicates whether a Total Suspended Particulate (TSP) monitor serves as a surrogate monitor for PM-10.

4.233.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.233.3 Attributes

Type: Character
Length: 1
Required: No

4.233.4 Uses

Monitors

4.233.5 Value Assignment

The valid values are "Y" and "N".

4.234 Tangent Street Number

4.234.1 Description

Identifies the number of the street around the site for which the data are being submitted. Street number is used to associate detailed street information for the site to streets closest to the monitors at this site.

4.234.2 Source

User-specified via the Site Street Information (AB) Transaction AQ2, or AQS Maintain Site (L1).

4.234.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.234.4 Uses

Tangent Roads

4.235 Time Period

4.235.1 Description

Indicates the period of time for which the summary covers.

4.235.2 Source

System-generated via the Accuracy Data (RA) or Precision Data (RP) Transactions AQ2, or AQS Maintain Accuracy Data (L62) or Maintain Precision Data (L61).

4.235.3 Attributes

Type: Character
Length: 2
Required: Yes

4.235.4 Uses

Monitor Precision Summaries
Precision Summary Protocols
Reporting Organization Precision Summaries
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.235.5 Value Assignment

Time Period	Description
Q1	1st quarter
Q2	2nd quarter
Q3	3rd quarter
Q4	4th quarter
YR	Entire year

4.236 Time Zone

4.236.1 Description

A standard time zone, as established by Section 1 of the Standard Time Act, as amended by Section 4 of the Uniform Time Act of 1966 (15 U.S.C. 261).

4.236.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.236.3 Attributes

Type: Character
Length: 30
Required: No

4.236.4 Uses

Sites

4.236.5 Value Assignment

The value must exist on the *Time Zones* view.

4.237 Traffic Count

4.237.1 Description

An estimate of the daily traffic volume on the roadway.

4.237.2 Source

User-specified via the Site Street Information (AB) Transaction AQ2, or AQS Maintain Site (L1).

4.237.3 Attributes

Type: Number
Length: 12.0
Required: No

4.237.4 Uses

Tangent Roads

4.238 Type Road

4.238.1 Description

The type of road or street being described.

4.238.2 Source

User-specified via the Site Street Information (AB) Transaction AQ2, or AQS Maintain Site (L1).

4.238.3 Attributes

Type: Character
Length: 20
Required: Yes

4.238.4 Uses

Tangent Roads

4.238.5 Value Assignment

The value must exist on the *Road Types* view.

4.239 Uncertainty Value

4.239.1 Description

The measure of method uncertainty associated with the sample data point, which will include components of both the analytical and the volume uncertainty. No blank corrections are assumed (other than laboratory baseline corrections which are an integral part of each analysis).

4.239.2 Source

User-specified via the Raw Data (RD) or Composite Data (RC) Transactions AQ2, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.239.3 Attributes

Type: Number
Length: 6.4
Required: No

4.239.4 Uses

Raw Data
Composite Data

4.240 Unrestricted Air Flow Indicator

4.240.1 Description

Indication of whether the flow of air to the monitor is restricted.

4.240.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.240.3 Attributes

Type: Character
Length: 1
Required: No

4.240.4 Uses

Monitors

4.240.5 Value Assignment

Indicator	Description
Y	Flow is unrestricted
N	Flow is restricted by obstructions
W	Flow is restricted unavoidably, and the probe location has been approved by the EPA

4.241 Upper Probability Limit (Reporting Organization Accuracy Summary)

4.241.1 Description

The upper bound of either a probability distribution, or confidence interval, for the applicable population of accuracy audits.

If either quarter in either half of the year has an *Count of Audits (Reporting Organization Accuracy Summary)* of 1, then the source data for both quarters in that half will be merged for purposes of calculating the upper probability/confidence limit, and reported with the second quarter of the half (i.e., Q2 or Q4). In this case, there will be no value for the corresponding first quarter in the half (i.e., Q1 or Q3).

4.241.2 Source

System-generated via Accuracy Data (RA) Transaction AQ2, or Maintain Accuracy (L61).

4.241.3 Attributes

Type: Number
Length: 6.4
Required: No

4.241.4 Uses

Reporting Organization Accuracy Summaries

4.241.5 Value Assignment

4.241.5.1 Analytical & Flow (Non-PM 2.5)

$$u = D + (S * 1.96)$$

u = upper 95% probability limit, where:
D = *Mean (Reporting Organization Accuracy Summaries)*,
S = *Standard Deviation (Reporting Organization Accuracy Summaries)*.

4.241.5.2 Flow (PM 2.5)

$$u = D + \left(\frac{S * t_{0.975,\, n-1}}{\sqrt{n}} \right)$$

where:

u = upper 95% confidence limit,
D = Mean (Reporting Organization Accuracy Summaries),
S = Standard Deviation (Reporting Organization Accuracy Summaries),
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to *n-1*,
n = Count of Audits (Reporting Organization Accuracy Summary).

4.242 Upper Probability Limit (Reporting Organization Precision Summary)

4.242.1 Description

The upper bound of either a probability distribution, or confidence interval, for the applicable population of precision checks.

4.242.2 Source

System-generated via Precision Data (RP) Transaction AQ2, or Maintain Precision (L62).

4.242.3 Attributes

Type: Number
Length: 6.4
Required: No

4.242.4 Uses

Reporting Organization Precision Summaries

4.242.5 Value Assignment

4.242.5.1 Analytical & Flow (Other)

$$u = D + (S * 1.96)$$

where:

u = upper 95% probability limit,
D = *Mean (Reporting Organization Precision Summaries)*,
S = *Standard Deviation (Reporting Organization Precision Summaries)*.

4.242.5.2 Flow (PM 2.5)

$$u = D + \left(\frac{S * t_{0.975,\, n-1}}{\sqrt{n}} \right)$$

where:

u = upper 95% confidence limit,
D = *Mean (Reporting Organization Precision Summaries)*,
S = *Standard Deviation (Reporting Organization Precision Summaries)*
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to $n-1$,
n = number of flow checks (i.e. *Count of Checks (Reporting Organization Precision Summary)*).

4.242.5.3 Collocated (PM 2.5)

$$u = CV \sqrt{\frac{n}{\chi^2_{0.05,\, n}}}$$

where:

u = upper 90% confidence limit,
CV = coefficient of variation, (i.e., mean),
n = *Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)*,
$X^2_{0.95,n}$ = the 0.95 quantile of the chi-square distribution with degrees of freedom equal to n.

4.242.5.4 Collocated (Other)

$$u = D + \left(\frac{S * 1.96}{\sqrt{2}} \right)$$

where:

u = upper 95% probability limit,
D = *Mean (Reporting Organization Precision Summaries)*,
S = *Standard Deviation (Reporting Organization Precision Summaries)*.

4.242.5.5 Federal Reference Method (FRM) Audit

$$u = D + \left(\frac{S * t_{0.975,\, n\,-\,1}}{\sqrt{n}} \right)$$

where:

u = upper 95% confidence limit,
D = *Mean (Reporting Organization Precision Summaries)*,
S = *Standard Deviation (Reporting Organization Precision Summaries)*,
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to $n-1$,
n = number of FRM pairs (i.e., *Count of Checks (Reporting Organization Precision Summary)*).

4.243 Urban Area Code

4.243.1 Description

The urbanized area within which the monitoring site is located. An urbanized area is a U.S. Census Bureau demographic entity that comprises a place and the adjacent densely-settled surrounding territory that together have a minimum population of 50,000 people.

4.243.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.243.3 Attributes

Type: Character
Length: 4
Required: Yes

4.243.4 Uses

Sites

4.243.5 Value Assignment

The value must exist on the *Urbanized Areas* view, and, in combination with *State Code*, on the *State Urbanized Areas* view.

4.244 Urban Area Represented

4.244.1 Description

The urbanized area from which the concentrations originated (not the location of the monitor).

4.244.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction AQ2, or AQS Maintain Monitor (L2).

4.244.3 Attributes

Type: Character
Length: 4
Required: No

4.244.4 Uses

Monitor Objectives

4.244.5 Value Assignment

Must have a value if neither *CMSA Represented* nor *MSA Represented* is valued. Conversely, may not have a value if either *CMSA Represented* or *MSA Represented* is valued. If valued, that value must exist on the *Urbanized Areas* view.

4.245 UTM Zone

4.245.1 Description

The zone of the Universal Transverse Mercator (UTM) system in which a site is located.

EPA Locational Data Policy requires that coordinates be provided for all sites. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.245.2 Source

User-specified, or system-generated from user-specified latitude/longitude coordinates, via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.245.3 Attributes

Type: Number
Length: 12
Required: Yes

4.245.4 Uses

Sites

4.246 UTM Easting

4.246.1 Description

The easting Universe Transverse Mercator (UTM) coordinate, expressed in meters (i.e., the horizontal distance from the reference edge of the UTM zone) for the site.

EPA Locational Data Policy requires that coordinates be provided for all sites. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.246.2 Source

User-specified, or system-generated from user-specified latitude/longitude coordinates, via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.246.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.246.4 Uses

Sites

4.247 UTM Northing

4.247.1 Description

The northing Universe Transverse Mercator (UTM) coordinate expressed in meters (i.e., for the Northern hemisphere, the vertical distance from the equator; for the Southern hemisphere, 10,000,000 minus the vertical distance from the equator) for the site.

EPA Locational Data Policy requires that coordinates be provided for all sites. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.247.2 Source

User-specified, or system-generated from user-specified latitude/longitude coordinates, via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.247.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.247.4 Uses

Sites

4.248 Vertical Accuracy

4.248.1 Description

Description of the accuracy of the vertical measure, reported in meters.

This data element is required by EPA Locational Data Policy (LDP). More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.248.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.248.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.248.4 Uses

Sites

4.249 Vertical Datum

4.249.1 Description

The edition of North American Datum used as the basis for determining the site coordinates. (The editions of North American Datum establish a network of monuments and reference points defining a mathematical surface from which geographic computations can be made.)

This data element is required by EPA Locational Data Policy (LDP). More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.249.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.249.3 Attributes

Type: Character
Length: 60
Required: Yes

4.249.4 Uses

Sites

4.249.5 Value Assignment

The value must exist on the *Vertical Data* view.

4.250 Vertical Measure

4.250.1 Description

The elevation, in meters, above or below mean sea level (MSL) of the site.

This data element is required by EPA Locational Data Policy (LDP). More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.250.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.250.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.250.4 Uses

Sites

4.251 Vertical Collection Method

4.251.1 Description

The method used to determine the Locational Data Policy (LDP) vertical measure.

This data element is required by EPA LDP. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.251.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.251.3 Attributes

Type: Character
Length: 3
Required: Yes

4.251.4 Uses

Sites

4.251.5 Value Assignment

The value must exist on the *Vertical Collection Methods* view.

4.252 Weighted Arithmetic Mean

4.252.1 Description

The weighted arithmetic mean.

4.252.2 Source

System-generated via the Post process.

4.252.3 Attributes

Type: Number
Length: 5.5
Required: No

4.252.4 Uses

Annual Summaries

4.252.5 Value Assignment

4.252.5.1 Seasonal and Everyday PM10

$$\sum_{i=1}^{q} u_i \Big/ q$$

where:

i = quarter,
u_i = *Arithmetic Mean (Quarterly)*,
q = number of active quarters.

4.252.5.2 Stratified PM10

$$\frac{\sum_{k=1}^{q}\left(\frac{\sum_{j=1}^{s}\left(\frac{\sum_{i=1}^{n} v_i}{n}\right)_j}{s}\right)_k}{q}$$

where:

i = a sample value occurrence,
n = number of sample values in a stratum,
v_i = a sample value,
j = a valued stratum,
s = number of valued strata,
k = a quarter with valued strata,
q = number of quarters with valued strata.

4.252.5.3 Default

Not valued.

4.253 Worst Site Type

4.253.1 Description

Within a particular monitoring area, those monitors with the highest PM-10 concentrations must have their worst site type set to 1, and are expected to monitor at the recommended collection frequency. Other monitors must be classified as either not worst site monitors, or monitoring on an accelerated schedule, but not at the recommended collection frequency.

4.253.2 Source

User-specified via the Basic Monitor Information (MA) Transaction AQ2, or AQS Maintain Monitor (L2).

4.253.3 Attributes

Type: Character
Length: 20
Required: Yes

4.253.4 Uses

Monitor Pollutant Areas

4.253.5 Value Assignment

Value	Description
1	Classified as having the highest PM-10 concentration and is expected to monitor at recommended sampling frequency.
2	Classified as not being a worst site monitor.
3	Monitoring on an accelerated schedule, but not at the recommended sampling frequency.

4.253.5.1 Monitoring Areas

May be valued for a Monitoring Area.

4.253.5.2 Default

Not valued.

4.254 Year of Traffic Count

4.254.1 Description

The year when the Traffic Count value was estimated.

4.254.2 Source

User-specified via the Site Street Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.254.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.254.4 Uses

Tangent Roads

4.255 Year Represented

4.255.1 Description

The year represented by the audit.

4.255.2 Source

User-specified or system-generated via the Accuracy Data (RA) Transaction AQ2 or AQS Maintain Accuracy (L62).

4.255.3 Attributes

Type: Number
Length: 4
Required: Yes

4.255.4 Uses

Accuracy Data

4.255.5 Value Assignment

4.255.5.1 Lead

User-specified.

4.255.5.2 Default

Derived from *Accuracy Date*.

4.256 Zero Span

4.256.1 Description

A measurement obtained with gas from a zero concentration. Zero span is the observed value read from the instrument when the concentration of the specific parameter used to test the monitor was zero.

4.256.2 Source

User-specified via the Accuracy Data (RA) Transaction AQ2 or AQS Maintain Accuracy (L62).

4.256.3 Attributes

Type: Number
Length: 5.5
Required: No

4.256.4 Uses

Accuracy Data

4.257 Zero Span Scale

4.257.1 Description

The number of digits to the right of the decimal point that were specified by the user, including trailing zeros.

4.257.2 Source

System-generated via the Accuracy Data (RA) Transaction AQ2 or AQS Maintain Accuracy (L62).

4.257.3 Attributes

Type: Number
Length: 1.0
Required: No

4.257.4 Uses

Accuracy Data

4.258 Zip Code

4.258.1 Description

The U.S. Postal Service Zone Improvement Plan (ZIP) Code used to address the monitoring site.

4.258.2 Source

User-specified via the Basic Site Information (AA) Transaction AQ2, or AQS Maintain Site (L1).

4.258.3 Attributes

Type: Character
Length: 9
Required: No

4.258.4 Uses

Sites

4.258.5 Value Assignment

In combination with *State Code* and *County Code*, the value must exist on the *County Zip Codes* view.